



T.H.O.R.

The Heartland Organization of Rocketry

THOR's Hammer

The official newsletter of The Heartland Organization of Rocketry!

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January/February 2006

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Volume 13 Number 1



Joe Michel's upscale of the classic Estes Orbital Transport was successfully flown on an H128 at our big three-day launch this past October. Both the booster and glider were successfully recovered. (Burney)

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NAR SECTION #562 LEADER – Bruce Lee

January-March 2006 Calendar

January

Event: January Meeting.

When: Tuesday the 3rd, 7:00 to 10:00 PM.

Where: La Vista Community Center.

February

Event: February Meeting.

When: Tuesday the 7th, 7:00 to 10:00 PM.

Where: La Vista Community Center.

March

Event: March Meeting and Auction.

When: Tuesday the 7th, 7:00 to 10:00 PM.

Where: La Vista Community Center.

Description: Besides being the March meeting, this is also THOR's annual auction where members can auction off and bid on rocketry related goods... it's eBay the old fashion way! 10% of the money made from each member's auction, unless arranged differently, will go to the club.

Complete 2006 Events Calendar on Page 14!

Newsletter Editor - Richard Burney

THOR Rocketry Hotline

(402) 505-3721

Internet Links of Interest

<http://www.nerocketry.org/>

THOR's official web page. Has information on our club, launch dates, and history.

<http://www.tripoli.org/>

Home page for the Tripoli Rocketry Association.

<http://www.nar.org/index.html>

Home page for the National Association of Rocketry.

<http://www.rocketryonline.com/index.cgi>

Rocketry Online is an excellent source of model and high power rocketry related news and information.

<http://spaceplace.nasa.gov/en/kids/>

Home page for NASA's Space Place program of which THOR has participated in since 2003.

<http://www.giantleaprocketry.com/>

Giant Leap Rocketry has been THOR's main vendor at our high power launches since 2002.

<http://www.kloubusters.org/>

Home page for the K.L.O.U.D.Busters Tripoli Prefecture of the state of Kansas.

*****ATTENTION!!!*****

*****MEMBERSHIP FEES ARE DUE*****

Just a reminder that membership fees are due for most members at the beginning of January. Either mail your check to the address on the back of the newsletter (please note the change in address) or bring it to the next meeting. The money we collect is vital to running this club and providing its services.

On a related note, we now have an incentive for paying up on time. For those who are paid up by the March meeting, they will be eligible for a season long, prepaid launch fee of \$45 per individual. This is a savings of about \$20 for the whole season. Also, for those who take advantage of this offer, they will be issued a launch badge. Full details are below.

- 1) The Annual Launch Fee is \$45 per individual.
- 2) The Annual Launch Fee is an option for members only; the participant's dues must be paid in full by the March club meeting.
- 3) The Annual Launch Fee must be paid in full by the March club meeting.
- 4) The Annual Launch Fee does not guarantee that all launches will be held without cancellation. There will be no refunds issued for any reason.
- 5) An individual who participates in the Annual Launch Fee is exempt from paying THOR launch fees for any and all THOR launches for the calendar year. Should an outside entity mandate that launch fees must be charged, those fees will be in addition to the Annual Launch Fee.

Editor's Hammer

By Richard Burney, Secretary and Newsletter Editor

Tonight we're gonna party like it's 1996...

Last year (2005) I celebrated both my 20th anniversary of flying model rockets and my 10th anniversary of being part of this club that we know today as **THOR**. This year of 2006 marks my tenth anniversary of flying my first composite motors (24 and 29mm AeroTech E's and F's) and the start of my NAR membership.

2006 also marks a number of 10 year anniversaries for THOR as well. First of which, THOR (or **ORC** as it was still known) became the first **NAR Section** to be formed in the very state where model rocketry was created. Secondly, THOR began the first of many high power launches in September 1996 from the farm of **Elmer Harms**; this has remained our primary flying field for the past decade. Third, this upcoming fall marks 10 years

that the **La Vista Community Center** has served as our meeting place. Finally, it was in the late fall of 1996 when the **Tripoli Nebraska** arm of THOR started the initial work on what would be THE big performer at **LDRS XVI** in Hartsel, CO... **Nebraska Heat**. Has time flown by or what?!

With another LDRS being held in the midsection of the US once again, some big and unique rocket being built by THOR's members for this event and several Level 3 attempts being planned by a number of its members (including me), I think 2006 should shape up to be a memorable year as well.

Extreme Rocketry Interviews...

Next issue I will be reprinting the interview I did with our very own **Kevin Trojanowski** for **Extreme Rocketry** magazine last summer. This was my first article I had written for the magazine and the first article of mine to be published in one of the rocketry magazines in over five years; guess I've just been busy enough with this newsletter as it is! ✨



Got to rest up for the busy year ahead... oh, all right, I was caught napping at the THOR Christmas party!

High Power Launch Pickrell, NE – October 14th – 16th

Article by Richard Burney

Pictures by Richard Burney and Robert Marcotte

The weekend of October 14th-16th, 2005 marked the second year in a row that THOR has held a multi-day launch in October besides its regular **Fire On The Farm** and **Nebraska Heat** launches earlier in the year. Though it is still an unnamed event and doesn't have the establishment of our other two big launches, this launch generated over **150 flights** which meant that this was our biggest launch of the year and one of our biggest launches in quite some time.

Friday, October 14th...

Friday was the usual day for setting things up and for some experimental flying. Only one flight, by Tom Kernes, took place. This L powered flight was the most powerful motor flown for the weekend. Here is Don Rice's testimony of what took place on Friday:

I don't have any pictures of it but I will give a report of the EX portion. It was attended by Mark Havel, Rick Bosworth, Tom Kernes, and myself. We generated a total of one flight! It was still a very nice flight, Tom once again bravely lent his beautiful RCDP Flash rocket as a test airframe for one of Redneck Rocketry's Wimpy Red motors, this time a 76mm 4 grain L motor. It was a beautiful straight up flight going up into a cloudless sky with a long red flame chasing it to 13,157 feet. After recovering it a mile away to the East in a harvested field Tom down loaded the data to his laptop so we could get some speed numbers and mach 1.1 was attained for a top speed. I think Tom's rocket has been named quite well considering the number of times Flash has been past mach. Like they say, "Ya should have seen it!"

As usual, it always sounds like the EX days ends up with the best weather conditions and some of the coolest flights. I wonder why that is (**wink**).

Saturday, October 15th...

Saturday was a pleasant day in the 60's if I recall (*I am writing this about three months after the fact so I'm sorry if memory is cloudy*☺) with plenty of sunshine. The winds were generally light to medium out of the southeast which a lot of times resulted in our rockets landing in the thick heavy weeds to the west; definitely **NOT** something to look forward to even when using a beeper or transmitter! All together, a total of **44 flyers** shot a total of about **98**

flights into the air. Many of the flyers were some of the Cub Scouts from around Lincoln and their families. Motors burned were as follows: **1/2A – 5, A – 11, B – 20, C – 36, D – 6, E – 2, F – 1, G – 3, H – 5, I – 6, J – 2, and K – 1**. As with many of our launches, Kent Burnett was at the field representing **Giant Leap Rocketry**.

Sunday, October 16th...

I was unable to attend Sunday's launch, but based off of the flight cards it looks like it was a busy day. A total **13 flyers** flew a total of **52 flights**. Motors burned were as follows: **A – , B – 2, C – 35, D – 3, E – 1, F – 2, G – 2, H – 1, I – 2, J – 2, and K – 1**. I don't recall what the weather conditions were that day (*at least up here in Omaha*), Rob Marcotte's one picture shows some sunshine and some people were wearing shorts and short sleeves so I guess it turned out pretty nice. The biggest flight of the day went to long time THOR member Mike Wrobel who flew a large upscale of the Estes Fat Boy on an AeroTech K700.

Conclusion...

All together, about **52 flyers** made a total of about **151 flights** for this weekend. Again, this was one of the largest events we've had from this field in quite some time.

A special thanks goes to all who made this a great weekend! ✦



Sherri Bosworth and her BSD Diabolo. (Burney)



Greg Rothman (left) with his SL2 along with Tyler and Mark Havel with their new Giant Leap Rocketry Talon 2 after both parties successfully recovered their rockets. (Burney)



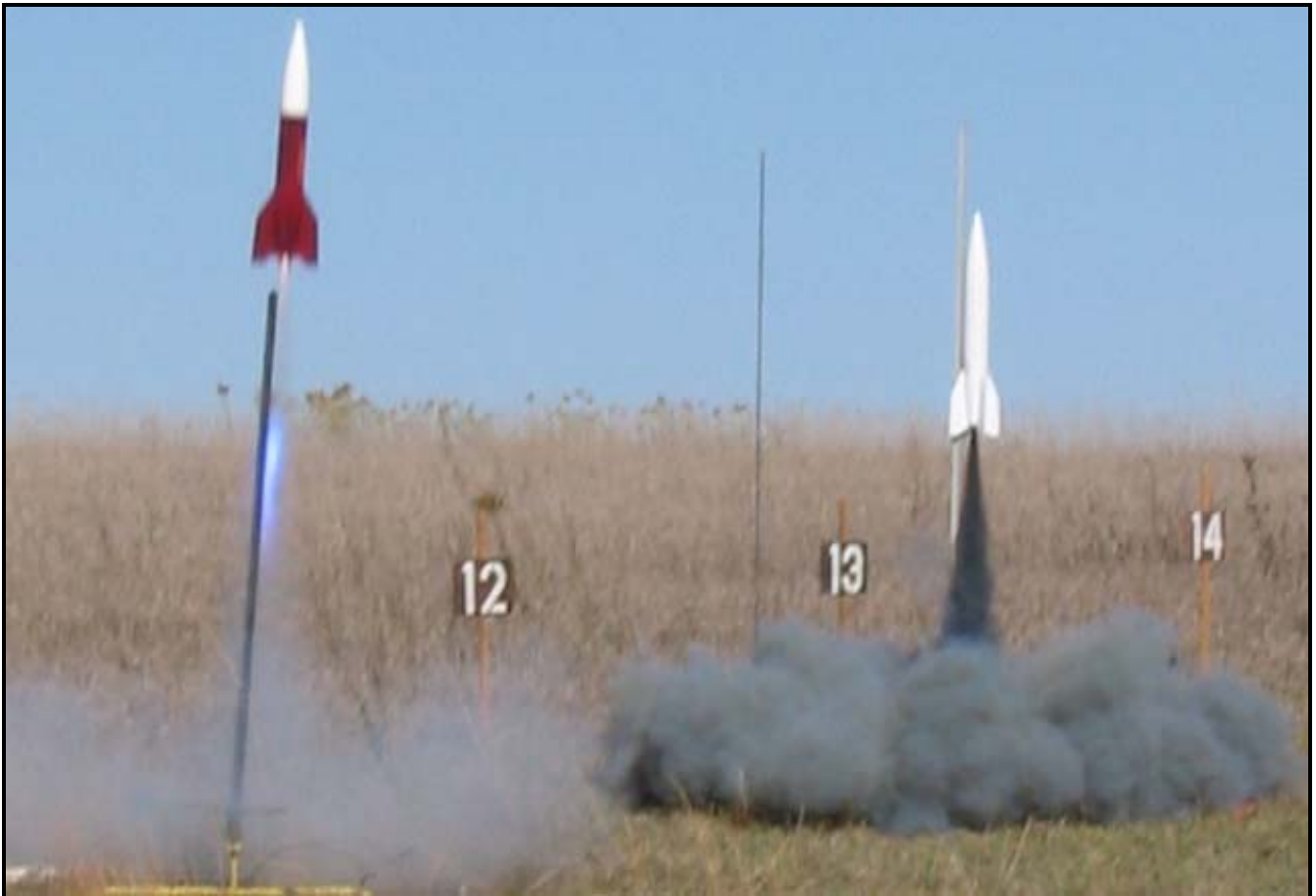
Robert Marcotte successfully flew his LOC Forte on an AeroTech H165 Redline to get his Level 1 Certification. Congratulations, Rob, and welcome aboard to THOR! (Burney)



As at our last October launch and some of our other past launches, we had quite a turn out from one of the Lincoln area Cub Scout Packs. I wish I could have attended a high power rocket launch when I was a kid! Hopefully these launches of ours that these Scouts have attended have been influential to them. *(Burney)*



Some of the Estes kits flown by the Scouts. *(Burney)*



Drag race! George Conner's (left) AeroTech I435 powered LOC V-2 competed against Andrew Wimmer's Pro54 J380 powered Polecat V-2. Obviously, we know who won.☺ (Burney)



Mark, how about painting one of these white and just calling it *White Trash?*© This was the third trash can rocket Mark has produced. Like all his other cans, this garbage can rocket became a self-disposing rocket after a less than stable flight. Fourth time's the charm? (Burney)



Though Rick's rocket looks like a stretched version of AeroTech's Initiator, this rocket is completely scratched built and designed for H and above flights. Rick successfully flew his Stretched Initiator on an AeroTech I365 Redline. (Burney)



Even I got in a few flights! For most of the duration of my AeroTech G-Force's life, I pretty much have only flown this rocket with G64's and G80's. For this flight I decided to go with an AeroTech H180. This motor works great with this large AeroTech kit! (Burney)



Trey Marcotte with Mike Wrobel's K700 powered Fat Boy upscale which flew Sunday. (Marcotte)

Oshkosh 2005 Airshow

Pictures by Tom Henry

Last summer, THOR's own Tom Henry had the opportunity to attend the big annual air show (<http://www.airventure.org/>) which is held at Oshkosh, WI. Most notably, several of **Scaled**

Composites record setting aircraft were there: **SpaceShipOne** (first civilian manned spacecraft) and its mother ship the **Whit Knight** and the **Virgin Atlantic Global Flyer** which was the first jet powered aircraft to fly around the world unrefueled (done last March by Steve Fossett). This is the second time a member of THOR has seen SpaceShipOne in public! ✈



Head on view of SpaceShipOne and the White Knight.



Tom Henry with SpaceShipOne and the White Knight.



Scaled Composites founder and head designer, Burt Rutan, standing on a ladder next to the White Knight.



The Virgin Atlantic Global Flyer was the first jet aircraft to fly unrefueled around the world.

Japanese Whiz Aims For Space - In Cartoon Uniform

Tokyo (AFP) Oct 11, 2005 - A Japanese Internet whiz is tipped to become the world's fourth space tourist - and he wants to orbit the earth dressed as an ace pilot from a hit Japanese animation series.

The candidate for the 20-million-dollar trip is Japanese investor Daisuke Enomoto, a 34-year-old former board director of the Livedoor Internet firm headed by flamboyant entrepreneur Takafumi Horie, local media said.

Enomoto has already passed medical checks and started flight training for a trip in late 2006, Jiji Press news agency reported.

Enomoto said in January that he was likely to be the first Japanese to make a paid space trip.

"I'm planning to do something amusing," he wrote then on his website.

If he gets Russian approval, Enomoto said he wanted to dress up on the trip as "Char Aznable", a character in the popular "Gundam" hero robot series of animation whose name is inspired by French singer Charles Aznavour.

Enomoto describes himself as a "Gundam otaku (geek)".

The third civilian to pay for a space flight, US millionaire businessman Greg Olsen, returned to Earth on Tuesday in the Soyuz space capsule.

The 60-year-old American paid Space Adventures 20 million dollars for a seat aboard the capsule and eight days of gazing down at the Earth from the International Space Station, 230 miles (370 kilometers) up. He was preceded into space by two other millionaire tourists, American Dennis Tito in 2001 and South African Mark Shuttleworth the following year. ✦



Left – Char Aznable (*aka Casavel Rem Deikun, aka Edward Mass, aka Quattro Bageena*). Whether Mr. Enomoto gets to actually wear a uniform like Char's or like Char's flight suit from the original Gundam series remains to be seen. Right – this isn't the first time Mobile Suit Gundam has collided with rocketry and the quest for space! Here was Richard Burney and his Gundam themed *Mobile Rocket Gundam*.

THOR 2006 Events Calendar

Compiled by Richard Burney, Secretary

Below is the events calendar for 2006. Due to the current situation with the La Vista City Parks and Recreation department, we are currently not able to have a definite plan on low power sport flying for the time being. As the year progresses, I will continue to update the calendar to reflect all changes, additions, and/or subtractions. If you have any questions, contact either Bruce or myself.

January

Event: January Meeting.
When: Tuesday the 3rd, 7:00 to 10:00 PM.
Where: La Vista Community Center.

February

Event: February Meeting.
When: Tuesday the 7th, 7:00 to 10:00 PM.
Where: La Vista Community Center.

March

Event: March Meeting and Auction.
When: Tuesday the 7th, 7:00 to 10:00 PM.
Where: La Vista Community Center.
Description: Besides being the March meeting, this is also THOR's annual auction where members can auction off and bid on rocketry related goods... it's eBay the old fashion way! 10% of the money made from each member's auction, unless arranged differently, will go to the club.

Event: NARCON.
When: Friday March 10th through Sunday the 12th.
Where: Kenosha, WI.
Description: NAR's annual convention.
For More Information: <http://www.narcon2006.org/>

Event: High Power Launch.
When: Saturday the 18th, 9:00 AM to 5:00 PM.
Where: Pickrell, NE.
Ceiling: 15,000' MSL (13,650' AGL). Window to 23,000' MSL possible with 72+ hour advance notice.
Fee: \$5.
Description: High power and low power sport flying.
For More Information: Check the rocketry hotline for any delays or cancellations if weather looks questionable.

April

Event: April Meeting.
When: Tuesday the 4th, 7:00 to 10:00 PM.
Where: La Vista Community Center.

Event: Fire on the Farm IX.
When: Experimental day on Friday the 21st. High power commercial flying on Saturday the 22nd and Sunday the 23rd, 9:00 AM to 5:00 PM each day.
Where: Pickrell, NE.
Ceiling: 15,000' MSL (13,650' AGL). Window to 23,000' MSL possible with 72+ hour advance notice.
Fee: \$10 for 1 day, \$15 for 2; EX day is free.

Description: THOR's annual three-day, high power, spring launch.
For More Information: Final details will be set by the April meeting.

May

Event: May Meeting.
When: Tuesday the 2nd, 7:00 to 10:00 PM.
Where: La Vista Community Center.

Event: National Sport Launch.
When: Friday the 27th through Sunday the 28th.
Where: McGregor, TX.
Description: NAR's annual sport launch.
For more information:

Event: High Power Launch.
When: Saturday the 20th, 9:00 AM to 5:00 PM.
Where: Pickrell, NE.
Ceiling: 15,000' MSL (13,650' AGL). Window to 23,000' MSL possible with 72+ hour advance notice.
Fee: \$5.
Description: High power and low power sport flying.
For More Information: Check the rocketry hotline for any delays or cancellations if weather looks questionable.

June

Event: June Meeting.
When: Tuesday the 6th, 7:00 to 10:00 PM.
Where: La Vista Community Center.

Event: Nebraska Heat IX.
When: Experimental day on Friday the 16th. High power commercial flying on Saturday the 17th and Sunday the 18th, 9:00 AM to 5:00 PM each day.
Where: Pickrell, NE.
Ceiling: 15,000' MSL (13,650' AGL). Window to 23,000' MSL possible with 72+ hour advance notice.
Fee: \$10 for 1 day, \$15 for 2; EX day is free.
Description: THOR's annual three-day, high power, summer launch.
For More Information: Final details will be set by the June meeting.

Event: LDRS XXV.
When: High power commercial flying from Thursday the 29th through Sunday July 2nd. Experimental flying on Monday the 3rd and Tuesday the 4th.
Where: Amarillo, TX.
Description: Large and Dangerous Rocket Ships number 25! Back in the central US!
For More Information: <http://www.ldrs25.org/>

July

Event: July Meeting.
When: Tuesday the 11th, 7:00 to 10:00 PM.
Where: La Vista Community Center.

Event: High Power Launch.
When: Saturday the 15th, 9:00 AM to 5:00 PM.
Where: Pickrell, NE.
Ceiling: 15,000' MSL (13,650' AGL). Window to 23,000' MSL possible with 72+ hour advance notice.
Fee: \$5.
Description: High power and low power sport flying.
For More Information: Check the rocketry hotline for any delays or cancellations if weather looks questionable.

Event: NARAM 48.

When: Sunday July 30th through Friday August 4th.

Where: Rainbow Valley, AZ.

Description: NAR's week of model rocketry competition. Typically there is a lot of sport and some high power flying, too.

For More Information: <http://www.naram.org>

August

Event: August Meeting.

When: Tuesday the 1st, 7:00 to 10:00 PM.

Where: La Vista Community Center.

Event: High Power Launch.

When: Saturday the 19th, 9:00 AM to 5:00 PM.

Where: Pickrell, NE.

Ceiling: 15,000' MSL (13,650' AGL). Window to 23,000' MSL possible with 72+ hour advance notice.

Fee: \$5.

Description: High power and low power sport flying.

For More Information: Check the rocketry hotline for any delays or cancellations if weather looks questionable.

September

Event: AIRFest X.

When: High power commercial flying from Friday the 1st through Sunday the 3rd. Experimental flying on Monday the 4th.

Where: Argonia, KS.

Description: This is the awesome high power launch held each year by the Tripoli Kansas Prefecture. The KLOUDBusters have a very excellent field to fly from and this site has been used for several LDRS's. Many members from THOR have attended the AIRFest launch in the past.

For More Information: <http://www.kloubusters.org/airfest.html>

Event: September Meeting.

When: Tuesday the 5th, 7:00 to 10:00 PM.

Where: La Vista Community Center.

Event: Balls 15

When: TBA.

Where: Blackrock, NV.

Description: The big, national, experimental high power rocket launch of the year!

For More Information: <http://www.ahpra.org/b2k.html>

Event: High Power Launch.

When: Saturday the 16th, 9:00 AM to 5:00 PM.

Where: Pickrell, NE.

Ceiling: 15,000' MSL (13,650' AGL). Window to 23,000' MSL possible with 72+ hour advance notice.

Fee: \$5.

Description: High power and low power sport flying.

For More Information: Check the rocketry hotline for any delays or cancellations if weather looks questionable.

Event: Guardians of Freedom Air Show.

When: Saturday the 23rd and Sunday the 24th.

Where: Lincoln Municipal Airport, Lincoln, NE.

For More Information:

October

Event: October Meeting.

When: Tuesday the 3rd, 7:00 to 10:00 PM.

Where: La Vista Community Center.

Event: "Still to be Named!"

When: Experimental day on Friday the 20th. High power commercial flying on Saturday the 21st and Sunday the 22nd, 9:00 AM to 5:00 PM each day.

Where: Pickrell, NE.

Ceiling: 15,000' MSL (13,650' AGL). Window to 23,000' MSL possible with 72+ hour advance notice.

Fee: \$10 for 1 day, \$15 for 2; EX day is free.

Description: THOR's new annual three-day, high power, fall launch.

For More Information: Final details will be set by the October meeting.



Greg Rothman and others ready his SL2 for a nitrous, hybrid flight at last October's launch.

November

Event: November Meeting.

When: Tuesday the 7th, 7:00 to 10:00 PM.

Where: La Vista Community Center.

Event: High Power Launch.

When: Saturday the 18th, 9:00 AM to 5:00 PM.

Where: Pickrell, NE.

Ceiling: 15,000' MSL (13,650' AGL). Window to 23,000' MSL possible with 72+ hour advance notice.

Fee: \$5.

Description: High power and low power sport flying.

For More Information: Check the rocketry hotline for any delays or cancellations if weather looks questionable.

December

Event: Christmas Party.

When: Friday the 1st.

Where: Denis Gilbert's house.

Fee: Free... but make sure to bring food and drinks.

Description: THOR's annual Christmas party!

For More Information: Final details for the party will be determined ahead of time. A map for directions to Denis' house is posted on the THOR web page.

Event: December Meeting.

When: Tuesday the 5th, 7:00 to 10:00 PM.

Where: La Vista Community Center. †

Estes Oracle Video Rocket

Article by Bruce Lee.



Hey Rocketeers! Have I got a great Estes rocket kit to tell you about. It is the Estes "Oracle" Digital Video Recording Rocket. It is totally awesome! If you have ever had dreams of looking out of the window of a space capsule while it launched, well this kit is the next best thing to it.

Back in the sixties Estes invented the "Cineroc," an 8mm movie camera rocket. It had a short life in production and has been lost to history. But now, Estes did it again, only with current technology. A digital mini video camera built in to the nose cone. And, you can make it work on your first flight.

It is so inexpensive, easy to use, lightweight, that I am sure you could adapt it for use with other hobbies you may have. At first I was thinking I could mount it on my motorcycle. Then I realized it could be mounted on model railroad cars, model airplanes and just about anything RC related. Cool!

When I received my kit I opened it, spread out the parts and found the instructions. Normally the instruction say put this into that and so on. These instructions have you attach one thing and then you get to play with the camera. First you install a single AAA battery. Then it is off to your computer.

Two and one half pages of instructions on how to load your computer and run the camera with great computer screen photos makes it all very easy.

If you run Window XP it works just like the instructions show you. Since the computer I loaded it on runs Windows 98 I had to make minor modifications to the procedure. You have to remove the Estes disk and load in the operating system disk for the "Found New Hardware" panel, then reload the Estes disk.

First you have to record something. It is really straight forward. Flip the switch on, the red LED comes on. Then press the start button, and the green LED starts flashing the 15 second countdown to video recording start. This gives you time to get back to the launch controller. The green LED goes on solid during recording and after 30 seconds the recording stops, the green LED goes out and the red stays on. Do NOT turn the unit off. After recording, the video stays in memory until the unit is switched off, resetting the unit. You must download the video before the unit loses power.

OK, now that you have made a test video of your work area, pull off the secret panel that hides the USB connector. Attach the supplied USB cable and hook it up to your computer. Then select Start-Programs-Dual Mode Camera-Twainapp and your download program and video manager loads. The first thing you will notice is a live image on your computer screen, it works like a web cam. Click the download button and then save the file and you are done! The software creates an AVI file that will play on your movie player.

After a couple of hours playing with the camera and making test videos, it is time to finish the rocket. Not much more to do, attach the parachute and you are ready to rock n' roll. It is a good sized rocket standing at 3 feet tall. The kit is mostly RTF, ready to fly, and comes with a good quality pre-assembled nylon parachute. The assembly work requires you to glue the tubes together, install the shock cord and attach the parachute. The nose cone is designed to allow you to video looking up at the parachute or down at the ground after the ejection charge goes off. Both are interesting.

Let's grab some motors, a launch pad and head out for the field. Unless you have a laptop you can take with you, it is going to be one video flight until you get home and unload it. The battery should run the camera for at least 12 hours if you cannot download the video at the field. I load in an Estes D12-3 (D12-5 works also), put the rocket on the pad, power up the video unit, press start and head back to the launch controller. When I see the green LED stop flashing, video recording has started and we Launch!

Now for the good part. I connect the USB cable, download the video and WOW! When played back you see the motor come to life, you leave the pad, you see the spectators fall away in the distance as you approach the edge of space! Well, only in my dreams. Get this kit, you are going to love it!✈

<http://spaceplace.nasa.gov/en/kids/>
A New View of the Andromeda Galaxy

By Dr. Tony Phillips and Patrick L. Barry

This is a good time of year to see the Andromeda galaxy. When the sun sets and the sky fades to black, Andromeda materializes high in the eastern sky. You can find it with your unaided eye. At first glance, it looks like a very dim, fuzzy comet, wider than the full moon. Upon closer inspection through a backyard telescope—wow! It's a beautiful spiral galaxy.

At a distance of "only" 2 million light-years, Andromeda is the nearest big galaxy to the Milky Way, and astronomers know it better than any other. The swirling shape of Andromeda is utterly familiar.

Not anymore. A space telescope named GALEX has captured a new and different view of Andromeda. According to GALEX, Andromeda is not a spiral but a ring.

GALEX is the "Galaxy Evolution Explorer," an ultraviolet telescope launched by NASA in 2003. Its mission is to learn how galaxies are born and how they change with age. GALEX's ability to see ultraviolet (UV) light is crucial; UV radiation comes from newborn stars, so UV images of galaxies reveal star birth—the central process of galaxy evolution.

GALEX's sensitivity to UV is why Andromeda looks different. To the human eye (or to an ordinary visible-light telescope), Andromeda remains its usual self: a vast whirlpool of stars, all ages and all sizes. To GALEX, Andromeda is defined by its youngest, hottest stars. They are concentrated in the galaxy's core and scattered around a vast ring some 150,000 light years in diameter. It's utterly unfamiliar.

"Looking at familiar galaxies with a new wavelength, UV, allows us to

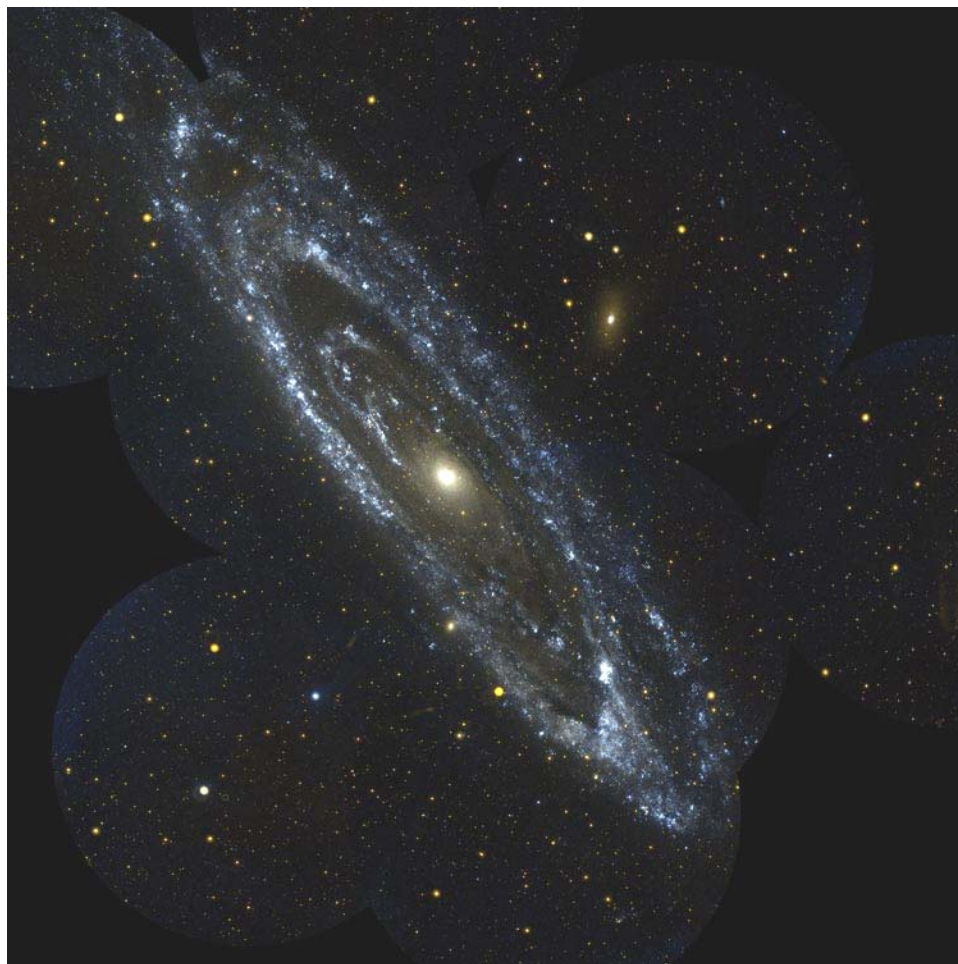
get a better understanding of the processes affecting their evolution," says Samuel Boissier, a member of the GALEX team at the Observatories of the Carnegie Institution of Washington.

Beyond Andromeda lies a whole universe of galaxies—spirals, ellipticals and irregulars, giants and dwarfs, each with its own surprising patterns of star formation. To discover those patterns, GALEX has imaged hundreds of nearby galaxies. Only a few, such as Andromeda, have been analyzed in complete detail. "We still have a lot of work to do," says Boissier, enthusiastically.

GALEX has photographed an even greater number of distant galaxies—"some as far away as 10 billion light-years," Boissier adds—to measure how the rate of new star formation has changed over the universe's long history. Contained in those terabytes of data is our universe's "life story." Unraveling it will keep scientists busy for years to come.

For more about GALEX, visit www.galex.caltech.edu. Kids can see how to make a galactic art project at spaceplace.nasa.gov/en/kids/galex/art.shtml. ↗

The GALEX telescope took this UV image of the Andromeda galaxy (M31), revealing a surprising shape not apparent in visible light.



THOR Meeting Minutes

Compiled by Richard Burney, Secretary

Pictures by Richard Burney

THOR Meeting Minutes 10/4/05

Attendance: Richard Burney, Bruce Lee, Jeff Moon, Denis Gilbert, Kevin Trojanowski, Greg Rothman, Doug Buhrman, Andrew Wimmer, George Wimmer, Janet Seagren (visitor), Austin Seagren (visitor), Robert Marcotte, Robert "Trey" Marcotte III, Bill Richardson, Larry Drake, Arley Davis, and Jacob Davis.

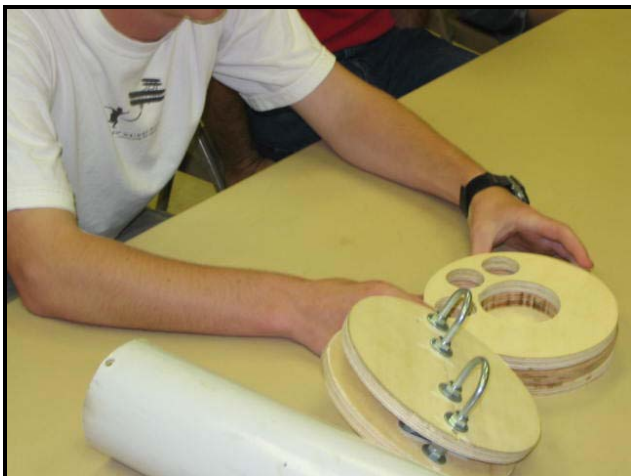
Meeting starts at 19:15.

The **Marcotte** and **Seagren** families are introduced.

Bruce Lee wrote up a review of the Estes **Oracle** digital video camera model rocket for **HobbyTown USA's** newsletter. In the article Bruce discusses the features and capabilities of this digital-video-camera-carrying-rocket.

Bruce confirms that **Master Blasters** has indeed been completely cancelled. The possibility still exists for it to be aired on another channel.

Richard Burney passes around the latest issue of **Extreme Rocketry** magazine along with the **Point 39 Productions** DVD of **LDRS XXI**. Next newsletter (Fall 2005) should be done this week. Rich conducted an interview with **Earl Cagle Jr.** of Point 39 Productions fame a few weeks ago; the interview will be printed in a future issue of **Extreme Rocketry** magazine.



Andrew Wimmer shows some of his custom centering rings for his cluster rocket.

George and **Andrew Wimmer** inquire into what it would take to repair their recently redamaged **Focused Insanity** rocket. Andrew shows a cluster rocket he's been working on; he is attempting to make his own custom centering rings for it.



George Wimmer shows the current state **Focused Insanity** is in.

Doug Buhrman, **Kevin Trojanowski**, and **Jeff Moon** briefly talk about some of the projects they are up to.

Bill Richardson shows some various body tubes he recently got. Bill had won an **AeroTech Initiator** starter set as part of the **Save Rocketry Now** raffle, but he plans on auctioning it off on **Rocketry Online**.

Bruce reports that former THOR member **Lyle Woodrum** will be moving to India due to his job. Lyle hopes to attend our October launch before leaving the states.

THOR's three-day launch will be on the 14th-16th. Need to find out who plans on doing EX flying on the 14th.

Bruce mentions that **Ky Michealson's** birthday party is coming up in a few weeks. Bruce says that Ky's birthday party is usually even better than his famous (*infamous?*) Super Bowl party!

LDRS XXV will be in Amarillo, TX on the July 4th weekend.

Meeting adjourned at 20:42.

THOR Meeting Minutes 11/1/05

Attendance: Richard Burney, Bruce Lee, Kevin Trojanowski, Robert Marcotte, Trey Marcotte, Greg Rothman, Rick Bosworth, Sherri Bosworth, Dan Cramer, Denis Gilbert, Jeff Moon, Nathan Warner, Tom Kernes, Mike Slater, and Arley Davis.

Meeting starts at 19:20.

Tripoli issues are discussed including the search for a new magazine to replace **High Power Rocketry** magazine.

Bruce Lee talks about the details of **Ky Michaelson's** birthday party a week-and-a-half ago. Bruce talks about the current **ATF lawsuit** situation. Bruce also mentions some of the details being proposed as part of the **NAR's** safety initiatives.

Richard Burney discusses some of the things he's been up to.

Denis Gilbert has started getting parts for his Level 3 rocket. Passes around the PML 7.5" type nosecone he has for it.

Robert Marcotte shows some of the rockets his son **Trey** had recently built.

Kevin Trojanowski shows some of his current projects including a "rocketman" (a model rocket that is laid out to look like a man).

Treasurer's report – we have about \$500 in the bank. Much of that will go to reserving our room at the **La Vista Community Center** for next year.

The 2006 calendar will be finished by the December meeting.

The issue of members being lax on paying membership dues is addressed. Ideas for influencing members to pay, such as reduced launch fees, are discussed.

Meeting adjourned at 20:45.

THOR Meeting Minutes 12/6/05

Attendance: *Richard Burney, Bruce Lee, Andy Kochanowicz, Arley Davis, David Austerberry, Ricky (visitor), Kevin Trojanowski, Nathan Warner, Jon Damme, and Larry Drake.*

Meeting starts at 19:20.

Nothing much from **Bruce Lee** this month! Bruce reports that **Ky Michaelson** has a new rocket cycle in the works. Ky's Super Bowl party is being planned.

Larry Drake talks about the plans and the progress made on his **1/3rd scale Little Joe II.**

Arley Davis puts in his bid for Vice President. No other position is being contested. Election votes will be e-mailed or phone in to **Richard Burney** during the next two weeks.

Nathan Warner shows his transmitter/receiver equipment he used on his Level 2 rocket at the October launch... actually

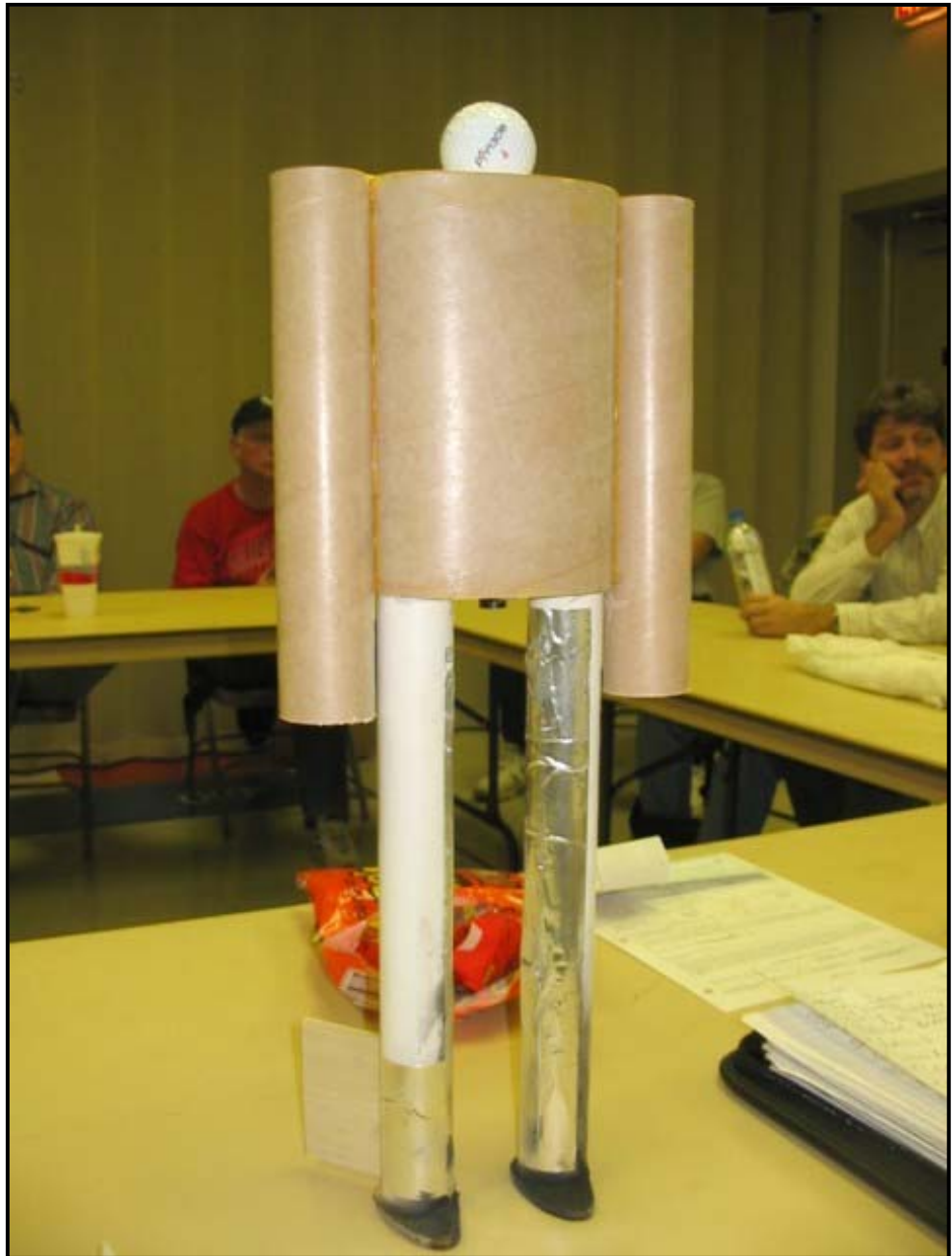
got his rocket back (a miracle for Nathan)!

David Austerberry talks about his team entry into this year's **Team America Rocket Challenge.** David's friend Ricky, along with two other Benson High students, is part of this team.

Bruce reports that the next step in the ATF case will start in January. Bruce reports that **Tripoli's** insurance policy will remain the same. Bruce also reports that Tripoli has put out the request for someone to publish a new magazine for Tripoli.

Meeting adjourned at 20:26. ✦

Kevin Trojanowski's "Rocketman".





What is THOR?

The Heartland Organization of Rocketry (THOR) is both an officially sanctioned Prefecture of the Tripoli Rocketry Association (Tripoli Nebraska #46) and Section (#562) of the National Association of Rocketry. THOR strictly adheres to the safety guidelines established by both rocketry associations.

THOR has been actively involved in the hobby of model rocketry (low power, high power, and experimental) in southeast Nebraska and southwest Iowa since the early 1990's. THOR members, along with their projects, have appeared on national television programs such as *Master Blasters* (The SciFi Channel), *Rocket Challenge* (The Discovery Channel), *Extreme Machines* (The Learning Channel), *Junkyard Wars* (TLC), and *Ripley's Believe It Or Not* (TBS).

When and where does THOR meet?

Meetings are usually held the first Tuesday of the month at the La Vista Community Center at 8116 Parkview St., La Vista, NE – turn east at the Sinclair Gas Station on 84th St. and go a block east (look for the big US flag). Visitors are welcome to attend.

When and where does THOR fly?

From March through November, THOR conducts at least one high power launch (1/4A – N class) each month. High power launches are held east of Pickrell, NE which is 30 miles south of Lincoln. THOR conducts at least two three-day high power rocketry events each year: **Fire on the Farm** and **Nebraska Heat**. Due to the situation with the city of La Vista, local low power sport launches will be announced prior to being held.

THOR's Hammer...

THOR's Hammer is the official newsletter of THOR. On average, it is published on a bimonthly basis. *THOR's Hammer* is available, in PDF format, through its website (<http://www.nerocketry.org/>) or is mailed to those without Internet access. Members are welcomed to contribute articles and pictures to the newsletter.

For additional information...

For any additional questions or to check on the status of an upcoming launch, call THOR locally at (402) 505-3721 (there is a voice mail option at the end of the message). Interested parties may also write their inquiries to the address at the right and are also welcome to contact any of THOR's officers.

THOR Membership Application Personal Information

Name: _____

Address: _____

City: _____

State: _____ Zip Code: _____

Phone Number: _____

E-mail: _____

Hobby Information

How long have you been in model rocketry: _____

Do you belong to a national rocketry organization - enter your membership number to the applicable organization:

NAR# _____ TRA# _____

Are you certified for high power rocketry – check mark your applicable TRA and/or NAR Certification Level:

Level 1 _____ Level 2 _____ Level 3 _____

Membership Rates

Half year membership rates will be divided by 2 and will add \$1. Write you check payable to "The Heartland Organization of Rocketry" or "THOR". Mail check and form to the below address or bring to the next meeting.

- Family Membership - \$36
- Senior Membership (18 and over) - \$24
- Junior Membership (18 and under) - \$12
- Correspondence Membership (members over 50 miles away from Omaha) - \$10

I agree to comply with THOR's policies as pertains to the safety guidelines set forth by Tripoli and the NAR. Failure to do so or conduct deemed unbecoming may result in expulsion from the club.

Signature: _____

Dated: _____

The Heartland Organization of Rocketry
625 Walnut Street
Hickman, NE 68372

Membership in The Heartland Organization of Rocketry is open to all interested parties.