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## **OCTOBER USHERS IN ROCKET'TOBER !**

Reported by Duane Lanterman

In spite of unseasonably cold weather ( 17 degrees as the day started out !) by 11am we were set up and ready to launch at our field outside of Ellinwood, Ks. Forty one flights were made during the day and one reached a GPS verified 7017 feet. Here is a recap of the days activities.

Linton and Peter Bayless our members in Overland Park had been anxiously waiting to launch some rockets this year and took full advantage of the opportunity. They had their usual collection of rockets and also brought along their "2017 Club Rockets" that they had recently finished. In fact Linton was not finished until that day. Seems that he was preparing to paint his model in the garage unbeknownst to him the 3" LOC nose cone had rolled under the wheels of his vehicle. Yep, you got it. As he backed up the nose cone became a pancake ! Keith Ravenstein made a quick trip into Great Bend after hearing the story to grab a replacement nose cone and the rocket was finally launch worthy. Both flew their models on G80's. Altogether they launched 11 rockets so won't go into detail but their tried and true *ASP* flew again on an H143 and Peter's "*Little Red*" made another fun flight.

Marvin Applegate had 9 successful flights 6 of which were powered by Estes's black powder E9, E16, and F15 motors and two Aerotech flights featuring a G74 and G80. The Estes 29mm motors are a lot of fun for those almost out of sight flights.

Duane Lanterman didn't have the best day as his *Firestorm* flown in several configurations seemed to go more down range than straight up but he did manage a

nice flight with this Estes *Star Orbiter* powered by an Estes E16 with a digital HD camera along for the ride.

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Mr. Scale, John Palmer, had 9 nice flights consisting mostly of sport scale rockets but he also flew his "2017 Club Rocket" which debuted at FFFF but this time carrying a chute release borrowed from Keith Ravenstein. One of John's outstanding flights was his Estes *V2 Maxi* on a E20.

Keith Ravenstein was out on the field looking much better after finishing his treatments of chemo and radiation. He made a couple of flights with his *Nike Smoke* with booster, finally having a successful flight on its second attempt. Keith will have a final report on his cancer status the 14<sup>th</sup> of December.

Steve Saner celebrated his birthday on this launch day and was accompanied by his wife Peri. Steve had a very successful day which included his *Hydra 7* clustering 7 C engines, his *Pringles* rocket on an F26, his *Vega* on a J270 (see article this issue on the Telemetrum system) and his *Crayon* powered by a H73. We ate cupcakes donated by Duane and Sharon Lanterman to celebrate Steve's big day !

As tradition we drove into Ellinwood and ate and visited at Annie Mays restaurant there before the crew parted and headed their separate ways. It was a good day !



*Illustration 1: John Palmer's V2*



*Illustration 2: The Bayless's ASP always performs well*



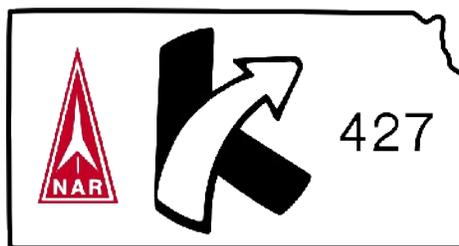
*Illustration 3: Marvin preps his rocket*



*Illustration 5: Duane's AirSpike*



*Illustration 4: Steve Saner's Hydra 7*



**KOSMO - NAR #427**



***ADVENTURE AT SPACE CAMP***  
**AS TOLD BY JOHN PALMER**

**For Father's Day my kids surprised me with a gift to attend the Adult Astronaut Adventure at the Kansas Cosmosphere and Space Center, also known as Space Camp. There were campers in attendance from Wichita, Salina, Topeka, Kansas City, and even one from Canada.**

**The adventure began on Friday night, when we gathered at the Cosmosphere for a brief orientation, and then a tour of the museum. Our guides worked in the curator or teaching fields, and were not space buffs like several of us, so they were eager to pluck our knowledge. After our tour we went to the home of the Director of Education, which was outside of town where light pollution would not be an issue. There we enjoyed food and drinks while viewing the planets and stars through a couple of telescopes. First, we had a great look at Saturn with its rings—it was amazing to see with my own eyes. Next, we looked at Jupiter and as I gazed upon Jupiter and four of its moons, I reflected on what Galileo must have thought the first time he looked upon this mini solar system. Talk about proof the Sun does not orbit the Earth—wow! Later we viewed the moon, and I was shocked to see how sharp the image was with a 16" telescope. As the night got darker and the clouds moved out we were able to see different areas of the sky. We saw the Ring Nebula, an open cluster of stars and some galaxies. We also watch assorted satellites zoom by overhead.**

**Saturday morning started with a tour of the curator's work room, who had several interesting artifacts out for us to see. There were assorted space suits from the American and Soviet programs, these were not meant to last as they were in various states of decay. We also saw a variety of space helmets, a baseball signed by the Apollo 1 astronauts, an Apollo flight computer (used on both command and lunar cabins), and a case that actually held moon rocks. One of the coolest things we saw was the carbon dioxide scrubbers from Apollo. If you remember from the**

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movie *Apollo 13* where the astronauts had to put a square filter into the round hole—that is what we saw.

After the tour, we went to our classroom to build a Quest Viper rocket—I got in trouble for working ahead of the class. While we waited for the glue to dry, we watched *Dr. Goddard's Lab* show, which I enjoyed since I had not seen it in many years. Then we went back to the room and built robots for robot wars. My partner and I lost in the first round but it was a lot fun.

That afternoon, we broke out in simulator groups and began practicing our launch mission for the following day. We then took a break for dinner and a trip to the Kansas State Fair grounds where we launched our rockets. We then went back to the Cosmosphere where we got to ride the Centrifuge up to 4Gs, one more than what the shuttle astronauts felt. We finished the day with a planetarium show, which made a lot more sense since we stargazed the night before.

Sunday started with the Multi-Access Trainer, the machine that spins you in three different directions. I rode it for all of two minutes and was quite dizzy when I finished. We spent the rest of the morning practicing in the simulator for our Shuttle mission. By early afternoon it was time for my team to fly. The four of us crawled in the Shuttle, and prepared for lift-off. We each were assigned assorted tasks to complete, SRB jettison and ET jettison were two of my early tasks. Later, I was responsible for landing. Not all teams landed safely, but I'm happy to say my team made it without the help of the ground crew.

As the day ended we were awarded certificates of completion. My family, the only family members in attendance, made it to the graduation ceremony—thanks family! After the ceremony, I took my family on a tour of the education department so they could see all the equipment we learned to use over the weekend. The grandkids enjoyed all the gadgets!

*If you are interested in participating in the next Adult Astronaut Adventure, check out the Cosmosphere's website, [cosmo.org](http://cosmo.org), as they are planning more adult space camps due to the success of this event.*



## Steve Saner Reviews the Altus Metrum Telemetrum

The following article is in response to a question about the Altus Metrum Telemetrum altimeter used in Steve's rocket at Rocket'tober flying to an altitude of over 7000 feet.

I've had the Altus Merum Telemetrum for a number of years. In fact I have the old 1.2 version device. It has now been replaced with a 2.0 version. This is the flagship product produced by Altus Metrum. It is a dual-deploy altimeter that also has radio telemetry.

I have flown this device at least a dozen times on a number of rockets and in a number of configurations. It has always worked well, but I had never put it on a rocket where I didn't see it land, and so I never had actually had to use it for tracking purposes.

About two years ago I came up with an idea to re-configure one of my existing rockets (my Level 1 cert rocket actually) so that I could put a big (J270) motor in it and send it well over a mile in altitude. I intentionally did not use dual deployment (just a single parachute at apogee). I wanted it to go out of site and I wanted it to drift some. Basically, I wanted to loose the thing so I would have to use the telemetry to track it.

Well, the first attempt went to 6800ft. Really nice flight. But it landed about 100 feet away. So much for tracking. The second attempt was configured a little differently and didn't go as high, but still out of site. But it landed maybe 1/4 mile away and we all saw exactly where it landed. So yesterday was the third attempt. For whatever reason it did fly higher than the previous two. But it also drifted over a mile away. None of us saw where it landed. So finally, I got to find it only using telemetry. It worked perfectly and I found it no problem.

Regarding the Telemetrum itself. As I said, this is the flagship product of Altus Metrum, but they have several other products, including one that has 6 (I believe) pyro channels and can be configured to work in a variety of multi-deployment and timer applications.

Reasons why I like the Altus Metrum products:

- The company is really just two guys that are, themselves, rocket enthusiasts. They make products they want to use for their own rocketry applications. They usually come to Airfest in Argonia, Kansas. They aren't trying to make a living off of these products. I like to support this type of work when I can.
- The products are 100% open source, both hardware and software. This means that you can learn exactly how they work, and even modify how they work if you have the skills to do so. There is a bit of a community around the products that contribute ideas\* for improvement. If you have the equipment and skills, you could even build it yourself. As an open source enthusiast myself, I like this.
- \* The ground station software is cross-platform. It works on Windows, MacOS, and Linux (really anything that can run Java). There is also an Android version, which is what I am using in the field on my phone. Cross-platform software is a huge issue to me and rather rare with a lot of commercial devices.
- Finally, the products seem to work and work well.
- Some reasons why some people don't care for the Altus Metrum products:
  - They are a bit pricey compared to some options. For what they do though, it doesn't seem unreasonable to me.
  - The radio telemetry uses the Amateur Radio 70cm band. As such, in order to legally use the device, you must have an Amateur Radio (Ham) license. This is no barrier for me, but for some it is.
- So, bottom line, yes, I am very happy with the product and I assume that I would like the newer versions just as well.

**MARK YOUR CALENDARS – IT'S TIME FOR THE  
KOSMO ANNUAL MEETING**

**SATURDAY JAN. 6, 2018**

MEETING TO BE HELD AT THE RESIDENCE OF

**STEVE AND PERI SANER**

**5205 SW TUMBLEWEED RD**

**ANDOVER, KS.**

(GOOGLE MAPS SHOWS THE LOCATION ACCURATELY. IF YOU NEED DETAILED DIRECTIONS FROM YOUR LOCATION FEEL FREE TO EMAIL STEVE AT [steve@saner.net](mailto:steve@saner.net))



**LUNCH AT NOON – PLEASE BRING \$5 TO COVER THE COST**

**BUSINESS MEETING TO FOLLOW THE LUNCH AND CONCLUDE AROUND 3PM**

**BRING YOUR WINTER ROCKET PROJECTS TO SHARE !!**

MEETING OPEN TO ALL CLUB MEMBERS AND THOSE WISHING TO BECOME MEMBERS.

**ELECTION OF 2018 OFFICERS**

**WE WILL SET THE 2018 LAUNCH CALENDAR AND KRAMO 38 EVENTS.**

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**NEWS UPDATE** – You may remember **Michelle Camp**, one of the ISU students who launched with us this summer. Her Level 1 rocket suffered a major cato. We've learned she's in California doing another internship and recently earned her Level 1 certification. Congrats !

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**WELCOME !** Our newest member is **TRACY MACKEY** of Hutchinson, Ks. Looking forward to seeing you at our launches.

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**NIGHT FLIGHT**

While it looked like our last launch of '17 would take place, as our 3pm launch time approached the drizzle began and the cloud cover thickened. Those dreaded words “launch scrubbed” were uttered !! We retreated to the local McDonald's to celebrate Duane Lanterman's birthday and visit for an hour and a half. The 2017 launch season came to a soggy end but we wait eagerly for the 2018 season and another opportunity to engage in our favorite hobby.

*Illustration 1: Night Flight was scheduled on Veteran's Day and so the American flag was proudly displayed by members as the drizzle fell. R to L-John Palmer, Ron Snow, Keith Ravenstein, Steve Saner, Sharon and Duane Lanterman.*

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