Association of Experimental Rocketry of the Pacific

TRIPOLI Rocketry Association, Inc. Prefecture No. 23

Volume 25 Issue 2

# AEROPAC Fall 2019 Newsletter

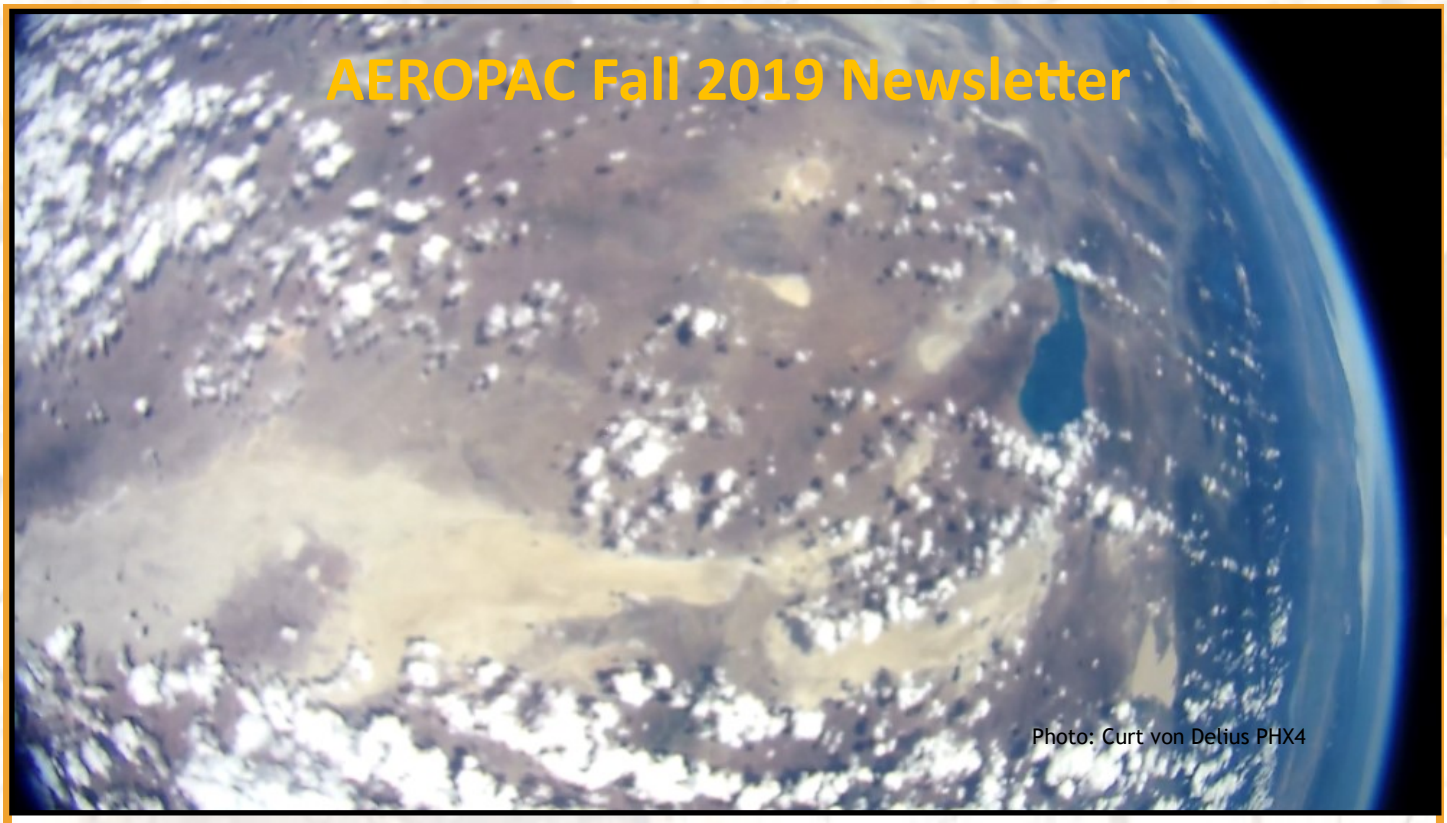

Photo: Curt von Delius PHX4

## President's Pad — Jim Green

Greetings, fellow AEROPAC members.

It seems like we have been getting wetter weather lately and had to cancel Mudroc this year. The weather for Aeronaut and ARLISS/XPRS was very mild with lots of time to fly rockets.

At the board meeting during XPRS it was decided to have a Mudroc "mud date" for the second week in July in the event that the regularly scheduled Mudroc launch is cancelled due to standing water at the launch site.

This year we got FAA waiver windows to 250,000' and there were a few attempts at Aeronaut and XPRS to utilize that waiver.

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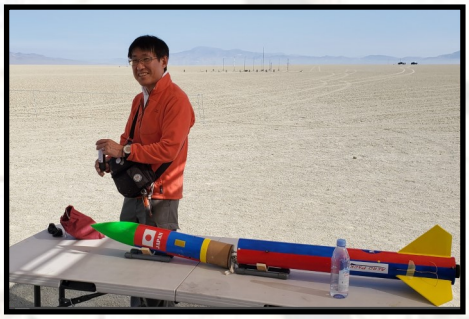
## Sumio Sawa's Black Rock Adventure

**Jonathan DuBose**

Most of us have seen the numerous Facebook postings on the AEROPAC website by a Japanese gentleman named Sumio Sawa. I had the pleasure of meeting him at Thunda Down Unda in April where I thought he got his L1 and L2 certifications. I know he flew his rocket twice there and they were both good flights. Sumio had planned to come to XPRS anyway and I was surprised that he was doing his certifications again. I'm not sure what happened in Australia but I think it might have had had to do with the AMRS, who staged Thunda, not being a Tripoli prefecture.

Matt Sikkink and I offered Sumio a spot to prep at our camp and I took some photos of his L1 and L2 adventure at XPRS. Congratulations Sumio on your successful Level 1 and 2 Certifications! You are always welcome at our camp! Hope to see you going for Level 3 soon! All photos by J. DuBose



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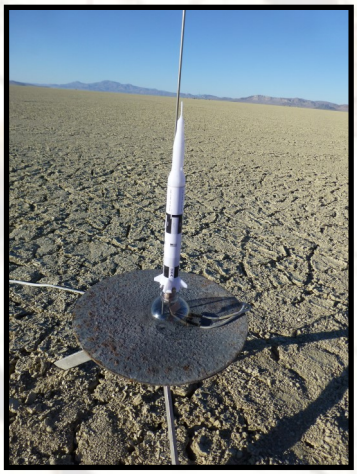
# The Saturn V 50/50 Challenge - a Tribute 50 Years in the Making

Jamie Clay

Our species loves celebrating and honoring round numbers, especially when it comes to historic events. The flight of Apollo 11 and inaugural first steps on the moon are no exception; to honor this achievement, AeroPAC hosted a challenge to fly as many Saturn V rockets as possible within the ARLISS / XPRS launch week. The goal was to send a minimum of 50 aloft (as in one for every year of the anniversary).


This is no small challenge - seriously - when, on average, this launch week sees 200 flights and most flyers don't have a Saturn V in their fleet.

The tribute itself was simple in concept: 50 flights of a Saturn V for the 50th anniversary. Any Saturn V flight counted towards the goal and a rocket participating only needed to look enough like a Saturn V so that the average flier knew what it was. There was to be no concern for scale, details or flight success. The latter was important to note because the

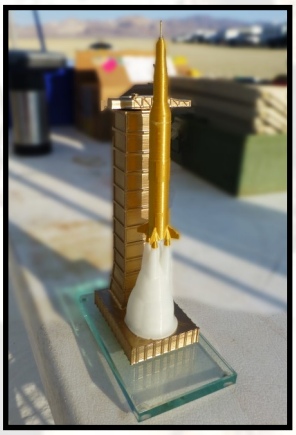




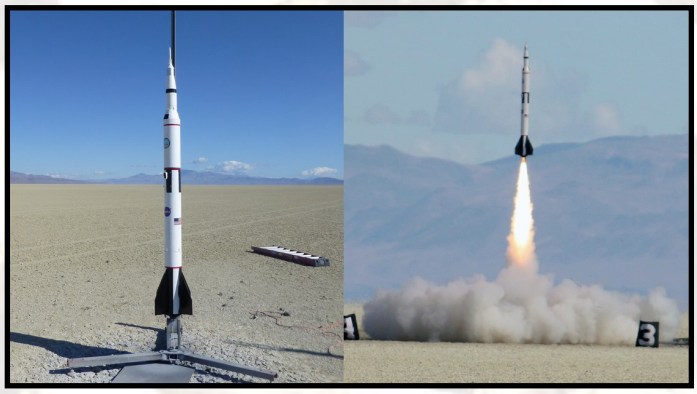
Saturn V (even with oversized fins) is tricky to get stable, so unstable

flights still counted towards the goal.

To further motivate participants, each successful flight (one that could be easily re-flown without significant repairs) would receive a tribute coin and the person with the MOST tribute coins at the end of the competition would win an Apollo-themed prize package that included a Lego Saturn V, Haynes Apollo 11 Workshop Manual and even a Micro Maxx Saturn V ready to fly!



As mentioned, not all flyers have a Saturn V at the ready, so links were listed on the club website that included 3D Printable DIY 'kits' as well as many popular commercial kits.



The first off the pad was Jamie Clay's Saturn V ARLISS. The primary mission of this inaugural journey was to deliver Tokyo University's ARLISS project two miles up and release it. It was a success and the 50/50 challenge had begun!

Next up would be Becky Green and her 3D printed BT-80-based Saturn V. The flight was not so stable but the numbers started accumulating just the same. Jonathan DuBose then stepped up with an Estes RTF Saturn V - and he flew that multiple times to take an early lead in the competition. Then Peter Clay, with both a 3D printed Saturn and the Estes RTF, joined in and soon he and Jonathan were dueling it out for the grand prize.

Peter and Jonathan were neck and neck when a new team rose from the crowd: Jamee Lawless and Matt Taylor! Armed with an Estes RTF and enough motors to take on the two top competitors (Peter and Jonathan) they started their coin collection growing.

Another popular Saturn V being flown was the Quest Micro Maxx RTF (an extremely tiny yet beautiful model that when launched, you would miss if you blinked). It was hard to go wrong with them as they use tumble recovery and are easily recycled for the next flight. Each flight was a guaranteed tribute coin! In fact a number of fliers who just wanted one of the coins as a souvenir took turns flying a small fleet of Micro Maxx Saturn Vs that Becky Green had brought.

Note: it is unusual for a high power rocket launch to have Micro Maxx rockets participate. The club doesn't supply launch pads that small. Luckily a Micro Maxx launch pad was available and 12 of the tiniest Saturns contributed to the challenge goals. Quest's Micro Maxx Saturn V was perfect for this purpose.

Even with all that going, by Friday night the challenge was significantly short of the 50 flights needed. There was a concern that if the weather didn't hold up for Saturday, the total might fall short of the goal.

But as the sun rose on a beautiful Saturday, so did the flight counts as more fliers entered the competition. By the time Saturday's launch window closed, we made it to 39 flights. We only needed 11 more

Fortunately, Sunday morning's weather was perfect for one last surge of flights! It would be the day of the Estes RTF (truly the best choice for this competition.) Very quickly, Peter, Jonathan, Jamee and Matt took us all the way to the goal with Jamee and Matt's winning flight also being the very last flight for the ARLISS / XPRS launch week.

Photos by J. DuBose

Con-
gratulations Jamee and Matt and thank you to all who participated in this tribute!

As far as we know, there have never been more Saturn Vs flown at any single launch. Someone should call Guinness.

## ARLISS 2019 - 21st Annual Launch

**Becky Green**

ARLISS 21st Annual Launch turned out to be another spectacular event. For the first time in many years, we had amazing flying weather.

As usual, ARLISS 2019 began just like normal on Sunday, September 8th at Bruno's when the students held their meet and greet meeting, which ended around 2:00 pm. I was busy helping get the Costa Rican students started building their kits that I forgot all about the time. At one point, I went behind the RV to grab something and saw what looked like a traffic jam on the playa but it was that everyone had just arrived and were awaiting instructions of where to park.

Photo courtesy of B. Green

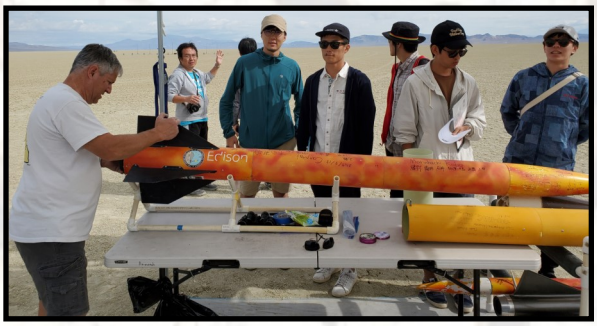
We had a bit of an issue getting the lock off the ARLISS trailer this year. You all know how rough the dust and then rain during the winter can be on locks....well we had it soaking for several hours and it still took several people, probably 15 minutes of time and the persuasion of a hammer and screwdriver for leverage to get the lock off.....but once we put our hands in the air showing the victory sign.....all the students converged on the trailer and the unloading and setting up of camp began. I would like to say a BIG, thank you to all the UNISEC Staff, students and professors who arrived early and helped set up ARLISS camp.

Photo by J. DuBose

After the group picture, registration began. This year registration ran smoother than last year with the help of UNISEC Staff. Just about the time registration ended, the first flight project was ready to assign. The weather was perfect, the range was all set up and working and the projects kept coming. We had a total of 9 flights on Monday....that's the most flights on a Monday. I was thinking we were going to have an easy day on Thursday this year if we kept up with typical years since Tuesday and Wednesday were normally heavier days than Monday. Well I didn't say it out loud.....but I should have never even had the thought cross my mind. Hope I didn't jinx it. Costa Rica continued to build their rocket while I was busy with ARLISS. They should be done by tomorrow.

**UNISEC leadership addresses teams**

All photos by J. DuBose

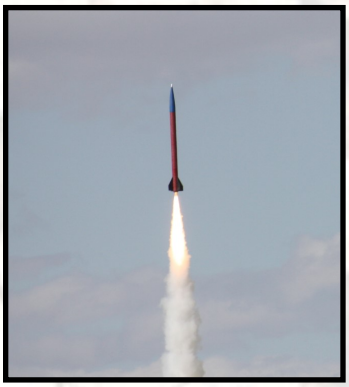


**Dave Raimondi makes a final adjustment to his rocket and at 10:08am Monday morning he gets the ARLISS ball rolling**

**Below L: Matt Sikkink discusses payload deployment with Tokyo Metropolitan team**

**Below R: Mike Parker flew this airplane "Event Horizon" from U. of Tokyo (we think) which landed 410m from the target and on a subsequent flight only 53m**

Tuesday started with another gorgeous day. It was a bit of a slow day for launching though. Where are all the projects? We're wasting all the good weather! That afternoon, during the most calm moments we could see dust brewing from the Burning Man area. Jim got on the PA and hit the siren to warn everyone to tidy up and secure the camps and made the announcement. However, with the language barrier.....lots of teams bailed and didn't come back until Wednesday and/or even Thursday. The dust never reached camp.....stayed to the East of us and dissapated almost as quickly as it started. We were able to continue to launch since the winds never really got above 10 MPH for a short period of time. However we managed to only get 8 launches that day.



**Paul Forester preps and NARLISS # 3 flown by Gary Lech. NARLISS also includes Joe Bevier, John Lyngdahl and NAR President John Hocheimer**


**Tuesday pm Haboob that missed us**


**Team SuperNova from Shonon U. with their Deep Learning Goal project. This project flown by Jonathan DuBose worked exactly as designed and reached the target.**

Wednesday morning started out great again. Wow....this is 3 days in a row with awesome flying weather. This should be one of our big days....but once again many of the projects weren't ready so we only got 9 flights off that day. I sure hope we get another awesome day of flying weather on Thursday.


**How perfect was Wednesday's weather? ARLISS flyer Mike Parker looks straight up tracking a flight**

The weather was cooler than usual this year so the (West Systems Slow) epoxy for the tip to tip on Costa Rica's kits was taking forever to dry so they didn't get to fly until today. Note to self....change over to the West Systems Fast Epoxy).


**Waiting for the epoxy to setup**

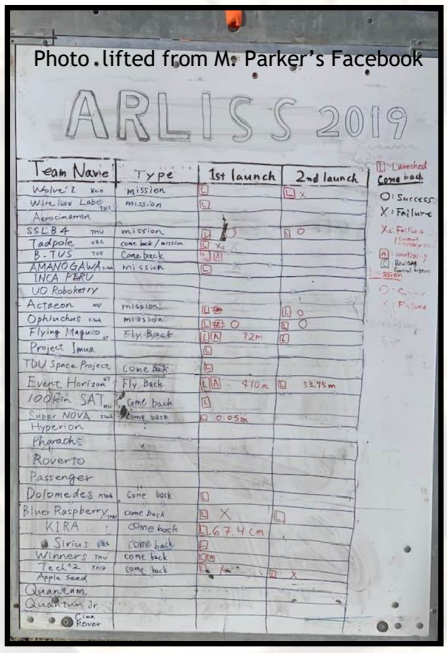
They flew pretty early in the day and spent the rest of the day painting their rockets on a huge tarp we set out for them. They wanted the rockets to look good for their L2 flights. They took their tests while the paint dried.


**Pretty rockets from Costa Rican flyers**

Thursday the last day of ARLISS was going to be a huge day. All the teams started arriving at my door well before the 8 am start time. The first flight was launched around 8 am. I made a deal with John Hochheimer Wednesday night that if he got the first flight of the day, he'd go into Reno and get all ARLISS banquet food. It took most of his day.....but he was a trooper. THANK YOU SOOOOOOO MUCH it sure saved me! I was really needed on the playa! The teams kept a steady stream of projects coming my way. I was barely able to get back to my RV when another team would arrive. I even had 2 teams at a time that would follow me to the ARLISS flyers tents. By afternoon, my ankle was killing me (still rehabbing after a fracture in mid April). At one point my foot was on my table trying to get the swelling and pain to go away. I had to resort to pointing to a tent and asking the teams to go there. Finally the flyers would come hang out at the RV and they would walk the teams down to their tents. I still managed to hobble around later in the day. There were 2 teams that still hadn't flown ( they had issues even getting to the launch) so UNISEC allowed them to fly after 4 pm which is the cutoff time each day. They approached me to see if we had any other rockets ready and Dave just happened to have 2 ready.

I brought both teams to Dave's tent around 5:30 and both were on the pad and flew at 6 pm and everything was retrieved before dark. In total we had 23 flights today which isn't our record.....but still a heck of a lot of flights. We are so glad we switched over to the new M1340 DMS version motors and of course M1419's. We use the M1419's during the slower days at the beginning and the M1340's during the busy days.

It was an amazing 4 days of weather for flying ARLISS.




**ARLISS Scoreboard sometime early on Thursday**

Along with all the ARLISS flights I was walking over to see all the Costa Rican students get their certifications and there were also 4 students from Hawaii who also got their L1 & L2 certification flights during the launch. Waaaaay too much walking for me!

We had an awesome last evening with the Costa Rican students who tore down their tents during the early evening and we set up beds in our RV for them since they were leaving there by 5 am.

Friday morning.....I was thinking all I had to do today was the banquet. Well.....I woke up right after the students left with a panic feeling. Did I remember seeing John bring the third porta potty on Thursday? OMG....I jumped out of bed and just had enough light to see if I could see the porta potties. Oh no.....there was only 2. I totally forgot to ask John to bring it with him on his way back from Costco. Now what do I do? I have to leave for the banquet in about an hour. What am I going to do? Who is awake this time of morning that I could beg to take the really full porta potty to Sparks and pick up the third one for the rest of the launch? I saw Peter Clay at his tent and I went over there with my best begging face on told him my issue. A few minutes later he said yes he would do it. THANK YOU SOOOOOOOO MUCH Peter.....you saved me!!!!

Leslie Sobieralski and I left about 7 am to the Community center to meet with the UNISEC Staff to start prepping for the breakfast. It turned into a huge group effort getting everything done super fast. As the students all arrived, they too pitched in to help. The set up went really fast and the presentations began on time.

It is always wonderful listening to the presentations. Those students have such incredible projects. If you've never attended the presentation, you might want to see it someday. They all share their information which sparks ideas for next years projects.

This year had the most spectacular results for the Comeback Competition. There were 2 teams who actually had 0 meters (yes they touched the target and turned off). Even better than that;


Photo by J. DuBose

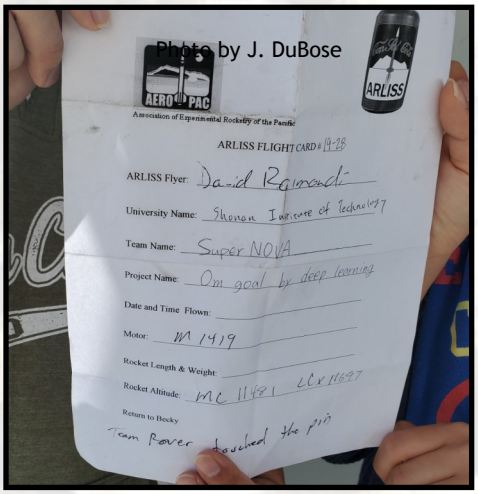


Photo by J. DuBose

**2019 Comeback Competition winner Takuya Saito and Miho Akiyama (who earned the nicknamed "Wonder Woman" even before the first flight). It was lots of fun flying this team.**

the winning team (Shonan Institute of Technology) got to 5 cm the first try, and flew 2 more times and touched the target both times. The team from Costa Rica didn't have camera recognition but was able to get within 67 cm by GPS alone. There was also a team with a flyer who got within 72 meters and 55 meters on their second flight. Well done everyone!!!!!!!!

I want to say a BIG THANK YOU to everyone who made this a spectacular ARLISS.....from all the students, professors, staff members who helped set up and tear down ARLISS camp and the community center and to UNISEC who coordinated each and every project and they stayed until the very end with me to help clean up and pack the last minute stuff into my van.

Also, a BIG THANK YOU to the ARLISS flyers, Jonathan DuBose, Dave Raimondi, Matt Sikkink, Mike Parker, Paul Forrester, Tim Robinson, Jake Hudson, John Hochheimer, John Lyngdal, Joe Bevier, Gary Lech, Jim Green, Ted Sobieralski, Peter Clay, Jamie Clay, Ken Biba and Dick Matthews. Without all of you ARLISS 2019 wouldn't have been possible.

If I missed your name please don't be mad….I'm probably having another senior moment….LOL.


Photo by J. DuBose

**Mike Parker takes a photo of a rookie all young women team late Thursday afternoon carrying his "White Whale" to the pad. The team is from Universidad Autónoma de Baja California.**


## ARLISS Photos contributed by Dean Walton

# Thunda Down Unda (Part 2)

**Jonathan DuBose**

I had been wanting to attend Thunda Down Unda (TDU) from the very moment I heard of it. My wife Mary and I travel to Australia often as our oldest daughter and family live in the greater Melbourne area. We had taken the Aussie wing of the family to Black Rock for MUDROCK 2014 which they really enjoyed and I was hoping that at least one of my 3 Aussie grandsons would take up the hobby.

Although it took a while for the seed to germinate at the end of 2015 I received an email from the oldest, George, stating that "We've recently been thinking about joining a rocketry club around a three hour drive from Melbourne. They are having a launch next April. I was wondering if you have some advice for us as we have very little experience. Things like which rockets to get, where to get them, anything we should know while launching them, etcetera. Thanks for the help. I hope to become an expert rocketeer …. someday."

Since that time George has advanced quickly from model rockets to mid power to becoming Australia's first Tripoli Mentoring Program participant. I have given him some advice but mostly he figured things out for himself. The young man is a voracious reader and a prodigious doer.

When TDU 2019 was announced for April of 2019 George and I made a pact that we would find a way to go and that he would launch his first "M" motor. Fortunately, George's parents are big time supporters of our rocketry hobby, as is my wife Mary, and by the summer of 2018 everyone was all in for Thunda.

**George getting ready to cut out fiberglass cloth for a "tip to tip" layup on his Comp 4**

It turns out we had to order our motors to be delivered through Australian Rocketry before ARLISS / XPRS 2018. We decided that we would order an AT M1315 for George and a CTI M840 and AT K700 and K 270 for me. I had a start on building a "sub-minimum" 75mm rocket and thought my K to K two stage would also be a good choice to fly. George decided on a Wildman Competitor 4 and we shipped it to him for a Christmas and his 17th birthday present. In the end, I couldn't finish my sub-min rocket in time so it did not fly until XPRS 2019.

TDU 2019 was shaping up to be an epic 4 days of rocketry. Per organizer, Blake Nickolic, "we are looking at flights to over 200k feet at TDU" and the website promised "rockets… will be launched reaching speeds up to 4,500km p/h as they hurtle towards the edge of the atmosphere"…."5000 spectators, 1200 launches, 20 countries, 4 days".

By late 2018 / early 2019 we had the logistical details down. Mary and I would fly to Melbourne in early April, I would help George finish his Comp 4, we would rent an RV and then "caravan" with their station wagon up to the launch site about 1350 kms to the north. In spite of all the time we have spent in Australia we had avoided having to do any real driving but now we would have to drive, and not just a car, but a 24 ft, 6 berth RV – 1300kms on the wrong side of the road! We practiced often and became comfortable with a car. But we had the jitters just thinking about the RV. Fortunately, the first day would be all on 4 lane freeways.

The Monday before the launch we left Melbourne and took a short "Ned Kelly" tour, organized by George, as it was right on the route. Kelly was a "bush ranger" (outlaw) in the 1850 /60s and is still a popular figure famous for his resistance to what was considered oppressive British rule. He is also famous for eluding the authorities, with significant help from the populace, and for his final stand. We visited several sites including the town of Jerilderie, a bank heist, and the scene of the final shootout at Glenrowan.

**Son-in-law Ian, myself, Louie and George with a depiction of Ned Kelly wearing his suit of armor**

We also stopped off to visit the 64 meter radio telescope at the Parkes Observatory. Parkes was one of several radio antennae used to receive live television images of the Apollo 11 Moon landing. A little under nine minutes into the broadcast, the Moon rose far enough to be picked by the main antenna and the international broadcast switched to the Parkes signal. The quality of the TV pictures from Parkes was so superior that NASA stayed with Parkes as the source of the TV for the remainder of the 2.5-hour broadcast.

**The 64 meter radio telescope at the Parkes Observtory**


**Our 24' 6 berth rental RV. It drove very nicely, had plenty of power but saying it could sleep 6 people was a real stretch. Notice George doing some sanding.**

We drove long hours the next two days and reached the launch site on Thursday. The camping site was just out in "the bush" on a farm so we set up in between the "guys from Victoria" including Peter, George's TMP mentor, and Monash University. Shortly, we met Charlie Savoie from Aerotech. Before we set out for the launch site we heard that there was an "issue" with the waiver but no specifics. It was then that we got the "scoop" on the waiver. Apparently (this is my recollection so it may not be totally accurate), the Aussie authorities had designated TDU an "air show" since there was going to be stunt planes, sky divers, a wall of fire and 5000 spectators. For that reason, the event secured only a 60k' waiver.

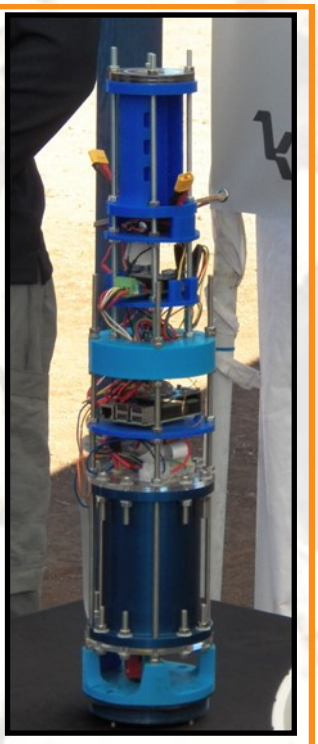

**The University of Sydney prepping on the flight line**

As it turned out, maybe because of the waiver issue, attendance was much less than was expected as many folks, including no doubt the folks attempting the "5 flights over 200k'", who simply didn't make the trip. I was hoping to meet Nick Lottering who has taken over several TRA altitude records but if he attended we were not aware of it.

What was apparent was that there were probably 15 or so university rocketry teams in attendance, including at least one from New Zealand. So the school kids greatly outnumbered the rest of us. They held a competition which included a 10k' and 30k' contest. The rest of the criteria we never quite figured out but there were some very sophisticated payload / telemetry packages and some really nice rockets and some spectacular flights. The teams appeared to be very well funded and well organized and were very enthusiastic and knowledgeable about their rockets and projects.


**Monash University presents their project code named Hyperion to the judging panel**

When inquiring about the motors we had ordered months before we were informed that "there might be a problem". Again I am going off what I remember so it may not be entirely accurate. It seems that the US government had invoked a new regulation that prevented any rocket motor with more than XX lbs of propellant from being exported. It seemed that the M1315 I had ordered for George's flight might have been held up in US customs. However, it turned out that all of our motors had made it to Australia. The reason the motors weren't held up, I heard, was that they were "old" (our M1315 had a date code in 2017) or had been manufactured prior to the implementation of the new reg??? Whatever….it's the government, so go figure. Anyway, since CTI is Canadian they were not affected and CTI motors were very prevalent.



**Hyperion's payload / telemetry package**

Another thing I slowly came to realize is that the organization sponsoring the launch, Australian Rocketry, is not a Tripoli Prefecture. I knew that the TRA club in Victoria (Melbourne) and the Australian Rocketry Club (Brisbane/Queensland) do not get along. But rocketry clubs not getting along is nothing unique to Australia. To add to the rivalry, Victorians, New South Walers (Sydney) and Queenslanders are famous for mocking each other in general. To us they are all Australians, who, as a group, are really great folks. It seems Australian Rocketry is part of, or maybe ARE, the Australian Model Rocket Society (AMRS) .

Another thing, of which we were not aware, was that you had to reserve a spot ahead of time on the flight line, which had limited space. So since most of our time was spent in our camp site prepping rockets, we probably missed some of the flights although we could hear the LCO and see the rockets in the air.

A truly unique aspect of this launch was that the porta-potties were probably ¼ mile away. So using the facilities could be quite an adventure, especially at night. Everyone simply cut through a couple of camps in order to shave another several hundred yards off the trek…I'm sure those folks were somewhat peeved.

We really enjoyed the various camping configurations that dotted "the bush". There were, of course, the RVs, mostly rented, tents, etc. but also some other interesting setups.

On Thursday, George ground tested his deployment charges by connecting them to the launch system. All good. That evening, I built the motor and made more deployment charges. George re-packed the chutes and re-checked the electronics. One note here: George assembled his GPS tracker from an EggTimer kit and has used it many times. It worked the first time he fired it up and came in handy at TDU.

Friday as we were loading George's Comp 4 to the launch rail a team from Monash University with their "Hyperion" rocket was also at the pad. Hyperion is an impressive rocket, very tall, exquisitely finished but with, by far, the smallest fins I have ever seen on a rocket of that size. I was skeptical that it would be stable but they said it flown it before. "We get it up to speed real fast, mate". How? "With a CTI N5800C*". This was going to be interesting!

**George and I prepping the Competitor 4 in our camp**

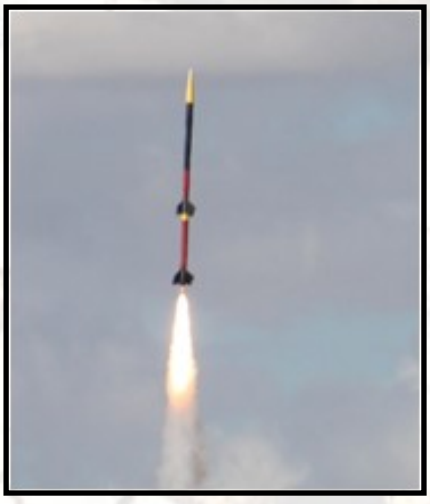
**Monash with the Hyperion at the pad**

George went first with a beautiful flight. His Eggtimer tracked it all the way up and down. The Comp 4 had a perfect flight with a nice recovery. Then the Hyperion blasted off with a huge roar and flew straight as an arrow to 25k or so. It landed 200 ft or so from the flight line. Very nice.

Even before this display of rocketry excellence, George had decided that he would attend Monash as an engineering student and participate in their rocketry program.


**George at RSO table with Ari Piirainen our neighbor in camp, arming the rocket and the Comp 4 on the rail ready to rock! We greatly enjoyed the company of Ari and his family**

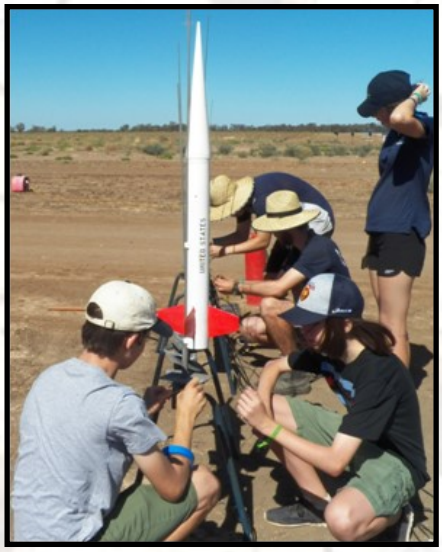
Monash fielded another team with a rocket called Athena that also featured tiny fins. It flew on a CTI M840 but not as straight up as the Hyperion.



**L: Monash U.'s Athena cants off to the right powered by a CTI M840. M: My K700 to K270 2 stage, R: Recovering my sustainer**

Saturday it was my turn. My two stage had a perfectly straight boost and then, after staging, must have hit a pretty nasty wind shear as it made a near 90 degree turn away from the flight line. I was expecting 18 to 19k' and got only 10k' but the wind brought the sustainer back and it landed less than 500 ft away. We could not find the booster after 4 or 5 hours of searching although several people said it was "under chute".

Later that day George helped his youngest brother Louie fly a Nike-Smoke which someone else recovered and brought back to the RSO table. This was our last flight.



**George assisting his younger brother Louie with his Nike Smoke and Ari Pirrainen's brute with an AT N2000**

On Saturday evening we attended the "Banquet Under the Stars" and planned to stay and hear Gary Rosenfield speak on the origins of high power rocketry. However, the student awards ceremony outlasted us – the winners had a big chant after each award that lasted seemingly forever. They were on adrenalin and we were just plain pooped so we went to camp and to sleep.

On Sunday morning we packed up, drove into Goondiwindi, ate breakfast and hugged each other goodbye. The Rubinsteins drove home to Melbourne and we headed to Brisbane to turn in the RV and get a small "ute" pickup for our adventure along the Queensland Coast and the Great Barrier Reef.

So we accomplished our dream of going to Thunda Down Unda. George successfully flew his first M motor, I got to fly my two stage and Louie flew as well. All in all, a whole lot of fun. Flying rockets with my grandsons, in Australia, with a bunch of other Aussie's, Kiwis and folks from pretty much everywhere...what could be finer!?

**Saturday night at the banquet**

Thanks to Blake Nikolic and AMRS for hosting the launch. It was surely a Herculean task! Good show, mates!

Photos by Jonathan, Mary DuBose or George Rubinstein

## Aeropac Launch Director Report – 2019

Gene Engelgau

**Like 2017 there was no Mudrock, the playa was flooded!** – James Flenner got an amazing photo of the Playa on a flight back to Reno. We launch in that large "puddle" near the top of the photo. A few days later Jim Green called the launch off, which was painful. Maybe this is going to become more frequent, we'll hope not?

### Aeronaut 2019

**Thursday Setup** - Myself and a few others arrived at the launch site around 5 PM for Aeronaut this year. This year Tony Alcocer helped tow the trailer out to the launch site, thanks Tony! The good news this year was there was a lot less smoke, and even no smoke.


Photo by James / Janet Flenner

**Friday –** Friday morning and NO SMOKE! Pretty amazing day.

There were not a lot of people yet at the launch, but more would arrive later. Here is the flyers meeting. It was nice to have Eric Kleinschmidt back. He spent last year doing his Navy Reserve duty in Djibouti. He was glad to be back! Friday's weather was great and we had some really good launches during the day.

Here is the West side of the flight line.


East Flight Line.

**Saturday –** We woke up to another amazing day. I took a Flyers Meeting photo, but my phone acted up and I did not actually get it. Maybe some-one else has one?

Jonathan DuBose helping at the Launch system.

Tim Robinson and his son after setting up their rocket.

This was our Chute serial number #10000 after landing.

Jim Green found a friend in his camp Friday, a Praying Mantis. There were quite a few around camp.

## ARLISS / XPRS 2019

I made it out to XPRS this year on Wednesday around 4:30PM. For 2019 this launch was one of the best ever. Very little wind, and clear skies. We only had some dust blow for a bit on Saturday afternoon. But overall one to remember. When I arrived Wednesday, there were already a lot of flyers at the launch.

**We were treated to an amazing Moon rise. You can just see the ROC flyers camp and their sign.**

**We had a good group of flyers at Friday's Flyers Meeting. Friday had some amazing weather with low winds.**

**West flight line.**

**Tony Alcocer - watching me for some reason.**

**My Fat Jack 5.5" Goblin on the Playa with a good view of the flight line.**

**Saturday – Like Friday's meeting we had a good number of flyers at the morning gathering. Tony wanted to be front and center.**

**The "Silver Bullet" beautiful polished aluminum rocket**

**Retrieving my Eve 3 I was able to capture the entire expansive flight line**

**Sunday** – Sorry, no photos Sunday. We loaded out earlier on Sunday and rolled off about 12:30. There were high winds predicted for the afternoon. By 2PM winds were over 30 mph with zero visibility. We did not want to get caught in that!

**The End till 2020 Season!**

All photos by G. Engelgau unless otherwise noted

## XPRS Extreme Altitude Contest Winners

**Darryl Paris**

It was good to see all the contest frequent fliers again!

This year we had many entries in the J-K-L-M classes with a few fliers winning by just a couple hundred feet!! Erik Conway managed to break a record by 2728' over the old altitude record in the L class but we still didn't have any entries in the O motor class.

Congrats to Jonathan DuBose for the highest flight entered in the contests this year 34,183'!

Extreme Altitude winners:

H motor - Janet Flenner 3024'

I motor - no entry

J motor - 1st. Kurt Gugisberg 14,632'

J motor - 2nd. Gene Engelgau 5826'

J motor - 3rd. James Flenner 5,554'

K motor - 1st. Allen Farrington 17,573'

K motor - 2nd. Greg Clark 15,527'

K motor - 3rd. Neil Hunstein 15,214'

L motor - 1st. Erik Conway 22,098'

L motor - 2nd. Tim Robinson 20,131'

L motor - 3rd. Mat Sikkink 19,885'

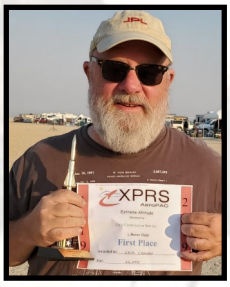
M motor - 1st. Jonathan DuBose 34,183'

M motor - 2nd. Dave King 25,871'

M motor - 3rd. Neal Hunstein 23,911'

No 2 Stage Entry






**Above: Janet Flenner, Kurt Gugisberg, Allan Farrington**

**Left: Erik Conway**

**Right: Jonathan DuBose**


I've been asked about the altitude records and it's something I've been doing since 2015 for us to compete with each other and keep track of great flights. It's unofficial & it's only for those that have entered the contests. Our club has had some very impressive altitude flights over the years and hopefully those fliers seeing this list will be more inclined to actually participate in the contests and elevate these contest records and get THEIR name on the list!!.

It is with great sadness that I'll be stepping down as your contest coordinator. Ten years of doing the contests has been a good run and life is pulling me in many directions. I've witnessed some amazing flights doing this, for instance Juniper

Slouber going to 26k+ on a K! I've seen little kids on their first trek to the playa/XPRS launch who've never launched a rocket and win a trophy in their class get all teary eyed with joy. I couldn't of done this without my wife Suzie helping out with the many duties like counting ballots & writing all the certificates.

**Altitude contest records since 2015:**

**H motor - Joe Bevier 10,538'**

**I motor - Mike Ostby 12,960'**

**J motor - Kurt Gugisberg 15,108'**

**K motor - Juniper Slouber 26,939'**

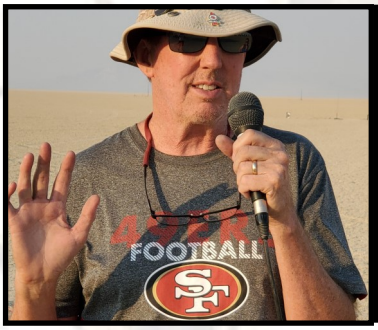
**L motor - Erik Conway 22'098'**

**M motor - Chris Attebery 37,798'**

**N motor - Mike Ostby 14,154'**

**O motor - no entries yet.**

**Two Stage - Curt Von Delius 95,786'**




**AEROPAC Launch Director Gene Engelgau expresses the club's thanks for the work done by the Paris Family in sponsoring the contest over the last 10 years or so**

**Susie Paris handed out the trophies to the winners and helped Darryl tabulate the winners in each class.**

**Thank you Susie and Darryl!**

Photos by J. DuBose

## Loft Duration Winners

The results of the Loft Duration contest seem to have been misplaced so we will just post the photos of the kids.





## Editorial: Keep the XPRS Contest Alive!

**Jonathan DuBose**

With the retirement of Darryl and Susie Paris from sponsorship and management of the XPRS Loft Duration and Extreme Altitude Contest , AEROPAC stands to lose what has become a signature event for the club. AEROPAC cannot let this happen!

The Paris' have developed the contest into something that has generated a friendly level of competition and given members (and guests) a goal to shoot for each year with their projects. Taking home a trophy or a certificate from the contest has come to symbolize rocketry excellence and proudly displaying the handsome trophies throughout the year in our homes has generated an opportunity to advertise our hobby to friends and family.

The cost of the trophies will require a small monetary outlay, around $200, and there will be some pre-launch effort to secure the trophies and print the certificates. The effort to manage the contest will also require significant effort in tabulating the results, completing the certificates and organizing the awards ceremony - on Saturday afternoon of XPRS. Volunteers will be needed.

**AEROPAC, should as an organization, sponsor this contest, in it's current configuration, from a financial and organizational perspective.**

The newsletter staff (me) will present a proposal to the AEROPAC Board of Directors to be discussed at the Year End Board meeting to officially sponsor the contest as an ongoing yearly event.




**Kids love the contest! So do adults!**





# Rocket, The Dog….Rest in Peace Old Friend

Tony Alcocer

I was looking at getting a dog when a firefighter friend of mine reminded me his yellow lab was pregnant, that I could have one and that he would give me a good deal. The day I went over to pick out my puppy I found out that there were 13 pups in the litter! When they opened up the kennel out spills a whole bunch of puppies! As I was looking at them playing and running around I looked back at the kennel to see one more very small and different colored puppy fall off the 2 inch lip of the kennel. It gets up, walks over to me and looks up at me. I knew at that moment that "I" had been chosen.

**Rocket as a pup**

Rocket started off life as the runt of a litter of 13. I've had a couple of other dogs in my life. But Rocket was different. He and I hit it off right away. Sure, we had issues. He liked chewing on my wife's shoes, plants and everything else that belonged to my wife. It took some tough love to get through this phase. After that it was smooth sailing.

One thing I could never understand was how was it that a pure breed yellow lab not like water? I tried teaching him to swim at an early age and at best I could get to him to wade. He was very good at wading! At times I'd be camping and fishing with friends that had "real" hunting dogs. Their dogs would swim out in the middle of the Sacramento River waiting for any stick to float down. Rocket would quietly be knee deep in water waiting for them to return with a stick and then grab it from them and bring it to me.

**Rocket owning me ..peeing on my chute**

Another thing that Rocket had issues with was fire. We would go camping or back packing and Rocket would not get within 10 feet of any fire. He could be freezing wet and cold and would not get near a fire. I know exactly why he was so afraid of fire.

Rocket had a heck of a nose on him. I could have him smell something. Make him sit and go hide the object and he could sniff it out. Once while at a TCC launch with a high school STEM group they crashed in the alfalfa and lost their electronic payload. They looked all over for it. I had rocket smell one of the other payloads and told him to find it …and he did! True story!

Anyway, Rocket was a great dog. He always loved seeing me. I do miss him but have no plans on getting another dog.

**Rocket having a bad hair day**

**Rocket taking a well deserved time out**

**Rocket was a longtime AEROPAC member and is sadly being missed**

All photos courtesy of Tony Alcocer

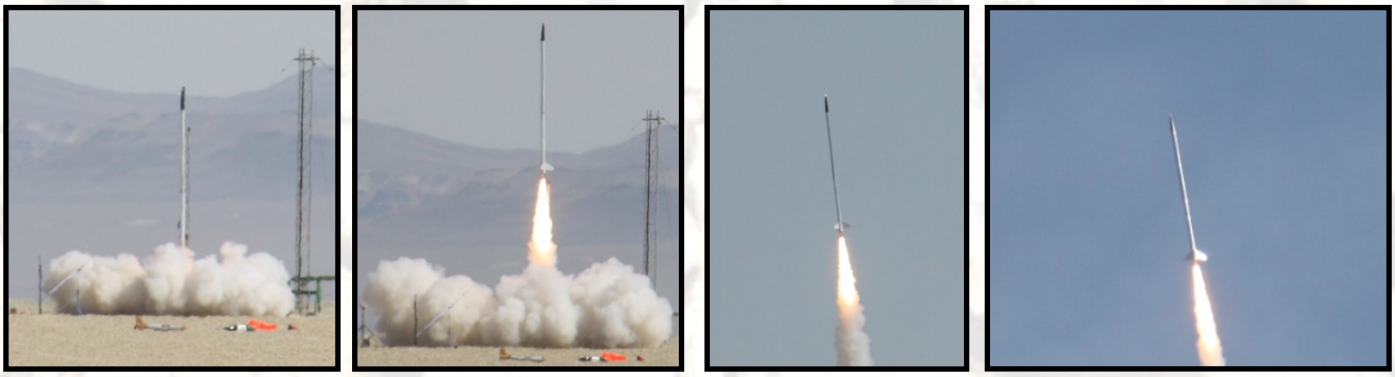
# Big, Beautiful All Aluminum Rocket—The "Silver Bullet"


Photo by J. DuBose

**A highlight of XPRS was the "Silver Bullet" flown by Gordon Balena and Judy McGrain of Grass Valley, CA. This is a 12 ft, 90lb on the rail, handcrafted, all aluminum beauty. It flew on an Aerotech M1939 to 6000 ft had a prefect recovery. This was the 3rd flight of the Silver Bullet.**

**Thanks Gordon and Judy for flying this beautiful beast with AEROPAC and we hope to see it fly again in the future.**


Photo courtesy of Judy McGrain


Photos by J. DuBose

## The Dogs Of XPRS

This year there seemed to be a lot of dogs at XPRS. Here are a few photos I snapped.

AEROPACers will recognize Standard Poodle Apollo (**Left)** who owns the Flenner's**.** Apollo was recently outfitted with some cool googles made of welder's glass to enable him to see during the day.

Eric Kleinschmidt's Gwen (**below)** suns herself during the flyer's meeting

**A very well behaved pooch from S. California during a flyer's meeting**

**Leave No Trace! Practicing excellent dog owner ethics on the playa**

**These two bowsers were too excited to sit still for a photo. Yeah, that is a very cool rocket!**


**Holding down the ROC camp during the flyer's meeting. "Peace, Love, Rockets" AND Dogs!**

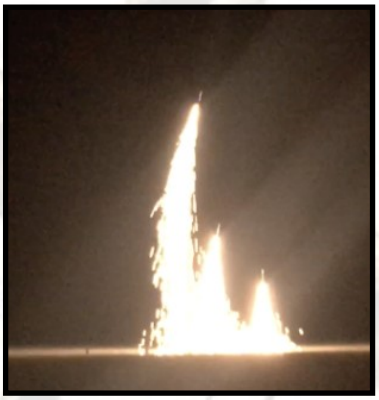
All photos by J. DuBose

## Logo-ized T-Shirts at XPRS 2019


All photos by J. DuBose

## Night Launch Craziness at XPRS!

**Jim Green's Blinkatudinous Maximus blows some Unicorn Farts** (photos by J. DuBose)



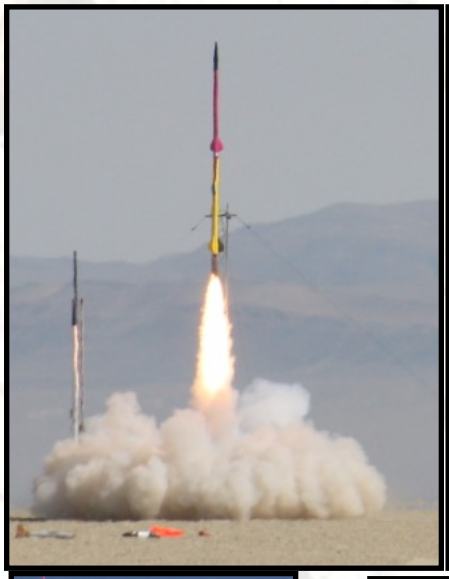
**ROC drag race with Derek Jameson Sparky motors…"If you didn't like that you don't like rockets!" We did like it!**

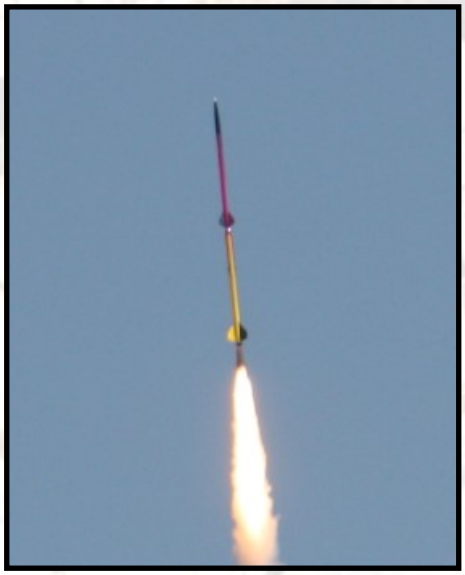
**See Tim Robinson's Video:**

**ROC Night Drag Race**

(Photos are screen shots from Tim's video)

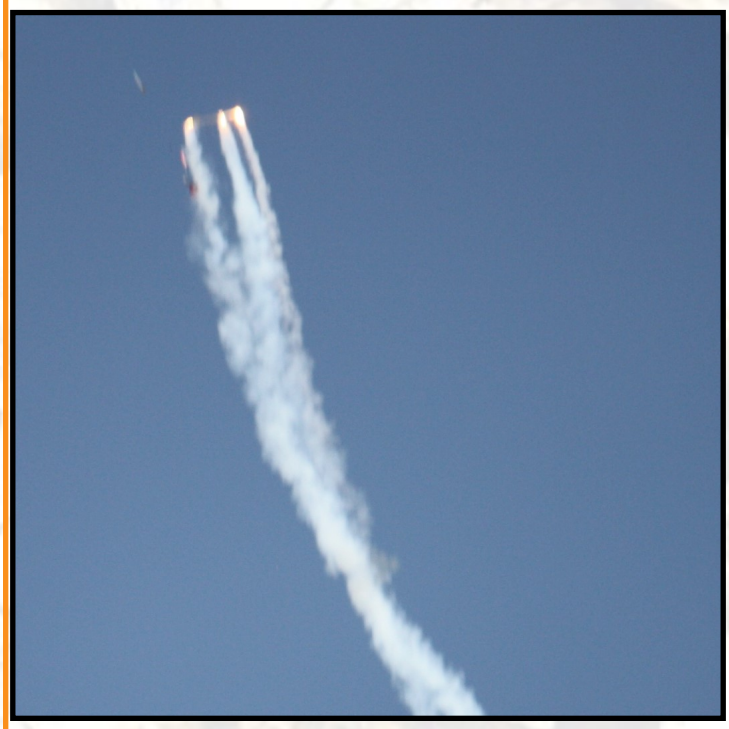
# Flying Big Two Stage Rockets is Really Difficult!

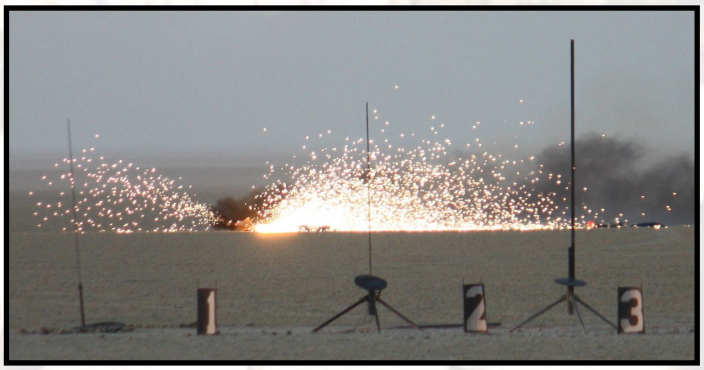





All photos by J. DuBose

# CATOs are Painful for the Flyer, But Sometimes Spectacular for the Spectator






**Left: Don't know who this was but the 3 grains are all going in the same direction - up!**

**Above: A rare Derek Jameson CATO—clearly a "Sparky" motor**

All photos by J. DuBose

**Lowell Hart and Tony Alcocer collaborated on this one at AERONAUT. Forward closure let go**

## Jim and Becky's Black Rock Trip Tribulations

**Becky Green**

Our travels to Black Rock for the ARLISS/XPRS 2019 adventure started Friday, September 6. We had already been packing the RV and van for 2 full days but I was doing the last minute packing of food and Jim was changing over the refrigerator to propane. A few years ago we lost our big propane tank to a blow-out and still haven't been able to find a matching tank to put back in so Jim attaches a small propane tank for traveling and puts zip ties to hold it in place. I was inside the RV when a bunch of commotion was going on outside the RV. Seems the tank has right hand threads and the regulator has left hand threads. One loosened and propane was blowing out of the tank and it hit Jim's thumb as he tried to grab it and he got frostbite and couldn't feel his thumb for a long time and it even blistered. Finally, we got on the road and made it to Auburn that afternoon late. He turned off the propane and hooked up to electricity while staying at his mom's house for the night.

The next morning we took off early and drove to Clay Wilson's house in Reno to pick up the porta potty trailer he picked up for me on Friday since Sani-Hut is closed on the weekends. We had one more stop for ice in Reno and then off to meet up with William Walby at Costco to do last minute shopping. Just as we started out from the ice place, someone yelled at Jim and said that the decorative rim on the RV was dangling literally by a fill hose. Jim was able to put it back on to limp to Costco and would fix it there. He got in traffic and didn't see where I went so he exited the freeway and I was waiting on the freeway for him....finally we were back to our caravan. OMG....never go to the Reno Costco on a Saturday. The parking was a nightmare for an RV and a van pulling Porta-Potty trailer. While William and I got food, Jim wired the rim but by then the propane had run out and he didn't want to take a chance of freezing his thumb again so he waited to fix that when we got to the playa.

We were back on the road to Fernley to fill up the tanks and then off to Empire to pick up the equipment trailer. We had to take the porta-potty trailer off the van, put it on the RV, then take the van in the yard to hook up the trailer. This all took a long time and meanwhile John Hochheimer and John Lyngdal were waiting patiently for us in Gerlach. We all caravanned out to the playa to figure out where we were going to set up. The van was very unhappy towing the heavy equipment trailer and was all over the road. No....it was not my bad driving.....it was the weight plus the van is lower to the ground so all the weight was in the tongue.

We all started getting unpacked and arranging everything so we could eat dinner. The winds started kicking up and it got pretty cold once the sun started to set. Jim and I had way too much to unpack so John L and John H. made us a delicious Elk steak dinner with yummy mashed potatoes. We got the RV unpacked just enough to have everyone in for dinner.

Sunday morning we all had breakfast and then continued unpacking. This was going to be my last non-stressed moments until the launch was over. Jim took off to Empire to get the ARLISS trailer while I continued getting everything ready. Costa Rica showed up and we all set up their camp and later got them started building their kits.

The afternoon was spent getting ARLISS camp set up. We had lots of help so that went really quick. The evening was beautiful and we all pitched in and started cooking dinner. I had lots of help doing all the food now that Costa Rica was there and later Hawaii showed up and helped too. Lots of fun times on the playa with lots of food always in the RV. I think there were a total of 22 people at one time eating.....oh soooooooo much fun. We even had University of Oregon eating with us when Hawaii had to leave before dinner to drive back to Fernley. I love having the big groups.....lots of work....but lots of hands helping.

**Astronaut Jose Hernandez veteran of Space Shuttle mission STS-128.** Photo courtesy of NASA.

I'm skipping ahead now to Saturday. (See ARLISS 2019 article for what happened during the week). The winds arrived but we were able to continue flying. We had a very special guest (Jose Hernandez the astronaut). He brought one of his employees Jonathan to get his L2 and Jim and I were helping him with a couple last minute things before the launch. It was lunch time and I put all the food out for the students and invited Jose and Jonathan to join us. We enjoyed lunch and got to talking about future possibilities with his company and rocketry in Mexico.

Sunday morning we knew the winds were supposed to hit us hard so everyone was busy packing up their camps. Jim helped with the tear down of the launch while I got help from Mike Parker, Paul Forrester and David Raimondi loading the ARLISS trailer. OMG.....I can't believe we got all that equipment back in the trailer. They did the best pack job ever. We finished just before the equipment trailer was finished. They had to leave because David was having van troubles and I started on our camp. OMG.....we have sooooooooooo much stuff there was absolutely no way we could get it done before the winds hit. We kept working on it but soon realized there was no way we could finish and be able to get off the playa on Sunday so we just waited out the storm. It was off and on all night long but the dust kept changing directions and we didn't get hit all the time.

Monday morning was windy.....but not dusty. We continued to hurry and pack....but just as we were down to our last things the winds shifted while I was walking to the ARLISS trailer and soon was blasted. I turned around and I couldn't see the RV which was probably only 25-30' away. I waited for several minutes and decided to just start walking in the direction of the RV. I got to the back end of it and turned and took a picture of the trailer. My first picture you couldn't see anything but the second picture you could start to see the outline of the trailer.


**The ARLISS trailer is in that white out somewhere**


**Barely an outline of the ARLISS trailer can be seen**

Finally we were able to hook up the trailer and start out. Jim had to navigate with his GPS while I followed. There were a few times we had to stop and let the white out pass before continuing on.


**The RV is about 20' in front and to the left of me.**

We finally got past the dust storm and all was clear on the other side of Burning Man's fence. It was sooooooooo obvious that the dust was all from them. You could follow the dust in a straight line all the way from 8 mile entrance. The closer we got to Gerlach there was still the wind but no signs of dust on the playa.

When we got off the playa, we could tell that the rain storm was not far from Gerlach. Man we got off the playa just in time. By the time we got to Empire to drop the trailer, the rain was just beginning. We got a bit wet unhooking the trailer but not too bad. We stopped in Empire and got a few gallons of gas in the van to make sure we had no problems like before getting to Fernley. Since there was soooooo much wind I figured the gas mileage would be terrible.

Ah....all done and on the road headed home. The rains and winds were getting worse so we were just hanging on and keeping the vehicles on the road. However, there was a huge cross wind about 20 miles outside of Empire. I saw stuff flying off the roof of the the RV. Wait.....what did I just see? Was that the awning coming off again? It can't be!!!! No....it wasn't that....but it was the Filon/fiberglass part of the roof on the RV. I finally saw big pieces of it popping up. What the heck? I couldn't believe my eyes. Jim finally found a place he could pull over. Now it was pouring and Jim had to get on the roof to finish peeling pieces of it off. a strip of the roof about 2 feet wide and 16 feet long was missing and the rest of the

of the roof....but the wind was soooooooo strong it would just rip it from his hands and blow across the highway. I was picking up all the pieces that I could see on the highway. We were totally soaked by now and started on the road again. Jim pulled over at the next pull out spot to remove another large piece that was making lots of noise inside the RV. Finally we made it to Fernley.

Wow....that was a crazy experience. But wait it's not over. Just after we dumped the tanks in Wadsworth and tightened the mirror (yes the winds did a number on it too) we were back on the road. Jim made it to the next exit and pulled off again. This time he had a rope tied to the mirror so it didn't go flying off. Off we go again....wait he's pulling off again at the next exit. The rope idea didn't hold it still. We removed all 4 screws, moved the mirror to another position and drilled 4 new holes and screwed it down. Finally we were back on the road and made it home without any more issues. That trip that normally would take no more than 6 hours took over 8 hours.


**Big chunks of the Filon/fiberglass roof missing**