# Earthrise


**The official publication of the Canadian Association of Rocketry**

**La publication officielle de l'Association canadienne de fuséonautique**

**Volume 12 Issue / numéro 1 March / Mars 2023**

## From the Desk of the Editor by Layne C. Pelechytik

Greetings! Let me be the first to welcome you to the first edition of Earthrise for 2023. I am excited for the new year and new possibilities ahead of all of us in the ever-expanding world of rocketry.

For those of you that don't know me, I live in the city of Lacombe, Alberta where I work in a nearby municipal government setting. I have been doing rocketry for some 38 years. I was introduced to model rocketry back around 1985 when I was in Cub Scouts of Canada. In each of our "packs" (groups), we assembled an Estes Alpha III model rocket. This was the old white and red version that so many of us grew up on. We flew them at night at one of our campouts, with long-burning birthday cake sparklers attached to them. Of course, it was an awesome sight seeing these "shooting stars" launch away from us and streak through the night sky and come down, and we could actually find them because the sparklers were still going! Needless to say, I was hooked. It was that year for either a birthday or Christmas present (I can't remember which) I received my very first Estes Space Shuttle Columbia Flying Model Rocketry Starter Set. My grandpa assembled and painted the shuttle while my mother detail painted and decaled it. I got many, many enjoyable years of flights out of this rocket.


In the very early 2000's, I discovered rocketry had progressed quite a bit and was introduced to mid-power model rocketry. E's, F's, and G motors? I was so excited at the possibilities. But it didn't end there. Soon after, I discovered high-power rocketry. I was ecstatic. I went to my very first high-power launch at Rock Lake in 2003, strictly as an observer. At this particular event, Team O'Canada's project the Dauphin screamed into the skies on an O and two outboard L motors. I had never seen anything so exciting as that ever in my life. I was instantly hooked on high-power. But I was also very intimidated. I didn't think I had what it took to fly HPR for many, many years. In fact, I didn't take the plunge into high power rocketry until 2013 where I flew my North Coast Rocketry by Estes Phantom 4000 at Fire & Ice where I was successful at certifying both Level 1 and 2. Later on, I certified at Level 3 as well as Electronics Endorsement. Level 4 is in my sights now and I do plan on making that happen in the near future.

I have and continue to do rocketry programs with youth and children. From camps to youth groups to cadet leagues, I truly enjoy sharing my love of rocketry with them. After all, it was opportunities like this where I was introduced to rocketry in the first place. Some of these kids are going to be tomorrow's high-power flyers, so I'm happy to help in any capacity. I also love doing on-board cinemaphotography which is flying miniature strap-on video recorders on-board rockets. The views from way up there are truly spectacular! And writing, as you can probably tell, is another one of my favorite things to do. I've also contributed articles to Earthrise which has allowed a medium to share my knowledge and experience with the greater whole membership of CAR/ACF.

I personally want to thank Bruce Aleman for all his years of hard work as Editor in bringing back Earthrise as a modern publication to all of us. Behind the scenes, Bruce made Earthrise fly by spending many countless hours collecting articles, getting them translated, and putting them all together for all of us to enjoy. I also want to thank all the many, many contributors of articles and photographs as well as translators who make Earthrise a possible publication to begin with. It's people like you that keep all of us in the loop for what's happening in the world of rocketry in Canada. On behalf of all of us readers, we greatly thank you.


Bruce Aleman was always good at throwing out a challenge to all of us, the readership. Another challenge he threw out was to have a look at the model and high-power rocketry records. I'd like to continue on with that and invite you to consider going for the gold in setting and breaking new CAR/ACF altitude records. Let's see what kinds of new designs and ideas stem out from this challenge. I'd love to see what's possible in this area; the potential is unlimited!

So welcome to a new year and an exciting one in the world of Canadian rocketry. I hope to see each and every one of you out there on the launch ranges this year.

In the words of Stan Lee, "Excelsior!" (which means 'Ever Upward!')

Layne C. Pelechytik, Earthrise Editor

Cover Photo: Supreena Eyestone is all thumbs up for her Level 4 Certification attempt with her high power rocket Merida. Supreena has become the first ever woman within CAR/ACF to have achieved Level 4 High Power Rocketry Certification. Congratulations, Supreena! Photo by Ken Mueller.

En couverture: Supreena Eyestone est fin prête pour sa tentative de certification L4 avec sa fusée haute-puissance Merida. Supreena est devenue la première femme membre de CAR/ACF à avoir obtenu sa certification en fuséonautique haute-puissance L4. Félicitations, Supreena! Photo par Ken Mueller.

# Le Mot de l'Éditeur par Layne C. Pelechytik

C'est un plaisir de vous présenter la 1ère édition 2023 de Earthrise! Je suis excité par l'année qui vient, et les nouvelles possibilités qui se présentent à nous tous dans le monde merveilleux de la fuséonautique.

Pour ceux qui ne me connaissent pas, je vis dans la ville de Lacombe, Alberta, où je travaille dans l'administration municipale. Je suis fuséonaute depuis 38 ans. J'ai eu mon initiation aux fusées de type "modèle" autour de 1985 quand j'étais dans les Scouts du Canada. Dans chacune de nos meutes, nous avons assemblé une fusée Estes Alpha III. On parle ici de la version blanche et rouge du temps où beaucoup d'entre nous étaient enfants. On les faisait voler le soir au campement, avec, attachés aux fusées, des cierges magiques de gâteau d'anniversaire. Evidemment, c'était grandiose de voir ces étoiles filantes artisanales décoller et redescendre, et on pouvait les retrouver vu que les cierges brûlaient encore! Inutile de dire que c'était inoubliable. La même année, pour mon anniversaire (ou pour Noël, je ne suis plus certain), j'ai reçu en cadeau mon premier kit de débutant "Estes Space Shuttle Columbia Flying Model". Mon grand-père a assemblé et peinturé la navette pendant que ma mère faisait les détails et plaçait les décalques. J'ai eu des années de plaisir à faire voler cette fusée!

Au début des années 2000, j'ai découvert que la fuséonautique avait beaucoup progressé, et j'ai découvert les fusées de moyenne puissance. Des moteurs E, F, et G? Les possibilités étaient excitantes. Mais, peu après, j'ai découvert la fuséonautique de haute-puissance. C'était l'extase. Je suis allé à mon premier lancement haute-puissance, juste en spectateur, à Rock Lake en 2003. A cette occasion, le projet Dauphin de l'équipe O'Canada a décollé avec un moteur O et deux moteurs L auxiliaires. Je n'avais jamais rien vu de comparable. Très intéressé par la haute-puissance, j'était quand même très intimidé. Pendant des années, j'ai pensé ne pas avoir les capacités de faire des vols haute-puissance. Il a fallu attendre "Fire & Ice 2013" pour que je passe mes certifications L1 et L2 avec une fusée Estes Phantom 4000, de "North Coast Rocketry by Estes". Plus tard, je me suis également certifié pour L3 et pour l'électronique en vol. J'envisage maintenant une certification L4, ce que j'espère accomplir dans un futur proche.

J'ai fait des programmes de fuséonautique avec les enfants et les adolescents, et je continue à en faire. Que ce soit des camps de jeunes, des groupes de jeunes, ou des cadets, j'aime beaucoup partager mon amour de la fuséonautique avec eux. Certains de ces jeunes sont les fuséonautes de haute-puissance de demain, c'est donc un plaisir pour moi de les aider. J'aime aussi faire de la cinématographie en vol, c'est-à dire attacher des petites caméras vidéo à mes fusées. Le point de vue d'une fusée en altitude est toujours spectaculaire! Comme vous vous en doutez, écrire est également une passion pour moi. J'ai contribué plusieurs articles à Earthrise, ce qui m'a permis de partager mes expériences avec les membres de CAR/ACF.

Je désire remercier personnellement Bruce Aleman pour ses années de dur labeur comme éditeur, ayant réussi à moderniser Earthrise pour tous nos membres. A l'arrière-plan, pour faire "voler" Earthrise, Bruce a passé des heures innombrables à rassembler des articles, les faire traduire, et assembler le tout pour la communauté des fuséonautes. Je voudrais aussi remercier les nombreux contributeurs d'articles et de photos, ainsi que les traducteurs. C'est grâce à vous tous que la publication d'Earthrise est possible, nous donnant un organe d'information sur ce qui se passe en fuséonautique au Canada. De la part de tous les lecteurs, encore une fois merci!


Bruce Aleman avait toujours un don pour lancer des défis aux membres de CAR/ACF. Récemment, il a lancé une compétition pour faire le vol le plus court d'une fusée Estes Executioner, ayant atteint l'altitude de 850 pieds AGL et ayant été récupérée intacte. Un autre défi qu'il a lancé était de considérer les records homologués pour les fusées faible-puissance et haute-puissance. J'aimerais continuer cet effort, et je vous invite à vous dépasser en battant des records d'altitude existant à CAR/ACF. Voyons quelles nouvelles idées et conceptions pourraient être développées dans ce cadre. J'aimerais voir ce qui est possible dans ce contexte, le potentiel est illimité!

Donc, bienvenue dans cette nouvelle année dans le monde de la fuséonautique canadienne. J'espère vous voir sur les sites de lancement cette année.

Comme disait Stan Lee, "Excelsior!" (qui veut dire "toujours plus haut!")

Layne C. Pelechytik, Éditeur de Earthrise

# Last President's Message by Tim Rempel

And so, it ends….

Hello all and welcome to my last President's Message. For all those unaware, On March 1, 2023 a new term for the leadership begins and a new Executive and Board will take over. It was great to see people step up to ensure that we can all continue to fly and I look forward to what Shawn, Marc and Art can do for our hobby.

I wasn't sure what to write in this message and, feeling nostalgic, I looked back at my other messages from over the last four years. There were some common themes throughout, and some reminders of the challenges that we faced, but also a fond look back at my time. The first thing I want to mention is that without the efforts of Shane Weatherill and David Buhler, I wouldn't have been able to look back as fondly. I want to again make it clear that this was not a autocratic presidency and it was much more a trifecta of leadership. I valued all their input and the great amount of work that they both did. Thank you to you both!

Here are a couple of topics that came up in my review.

1. The ever present interest from across Canada in our hobby. There was rarely a week that went by that I did not get contacted by someone looking for more information on rocketry, where to launch, how to build a rocket, etc. While I couldn't always be of help, it did prove that there is interest out there and CAR/ACF can be a help to people. We do have limitations due to our small size, but there is a part for the organisation to play.
2. Covid. I'm not going to say much about this, just that I feel our organisation responded as best we could to a rapidly changing unprecedented event.
3. Loss of insurance, and subsequent regaining insurance in 2020. This was a very stressful time for us and took a lot of work to regain our coverage. The key point that I want to stress, and was in my message from September 2020, was that the only reason we could obtain a feasible insurance option was due to our exemplary safety record. All the work that the leadership of CAR/ACF has done over the last decades meant we are still able to fly.
4. How lucky we are to have a group of volunteers that enable all of us to enjoy this great hobby! Whether its as a RI, RSO or even Pad Manager at a launch, to the different provincial reps, or the people that I have had the privilege to serve with on the different Executives over the years. All have put their time in and served CAR/ACF greatly. Thank you all!!

And now, I look forward to stepping back and being just a regular flier again. I am not going away, and look forward to being at launches, building (fingers crossed), and still assisting my fellow fliers as best I can.

Safe flying to you all!

Tim Rempel

# Message de l'Ex-Président par Tim Rempel

Et oui, c'est fini...

Bonjour à tous et bienvenue à mon dernier message en tant que Président. Pour ceux qui l'ignorent, le 1er Mars 2023, un nouvel exécutif a pris les rênes de l'association. C'était satisfaisant de voir les gens se porter volontaires pour s'assurer qu'on pourra continuer à voler, et j'ai hâte de voir ce que Shawn, Marc, et Art pourront faire pour notre passe-temps.

Je n'étais pas sûr des sujets à couvrir dans ce message et, me sentant nostalgique, j'ai regardé mes messages précédents des quatre dernières années. Il y avait des thèmes récurrents, quelques rappels des difficultés surmontées, et aussi de bons souvenirs. La première chose à mentionner est que sans les efforts de Shane Weatherill et David Buhler, je n'aurais pas d'aussi bons souvenirs de cette période. Je voudrais rappeler à nouveau que ce mandat n'était pas une présidence dictatoriale mais bien un trio dirigeant. J'ai beaucoup apprécié leur contribution et l'énorme quantité de travail qu'ils ont accompli. Merci à vous deux!

Voici quelques sujets couverts qui méritent un rappel:

1. L'intérêt toujours présent pour notre activité à travers le Canada. Il s'est rarement passé une semaine sans que je ne sois contacté par quelqu'un cherchant de l'information sur notre passe-temps, où lancer, comment construire une fusée, etc. Bien que je ne pouvais pas toujours les aider, cela prouvait qu'il y a de l'intérêt et que CAR/ACF peut aider les gens. Vu notre petit nombre de membres, nous sommes limités dans ce que nous pouvons accomplir, mais l'organisation a un rôle à jouer en fuséonautique.
2. Covid. Je n'en dirai pas grand chose, mais je pense que l'association a répondu le mieux possible à un événement sans précédent et dont les ramifications évoluaient rapidement.
3. La perte de notre assurance, et l'obtention d'une nouvelle assurance en 2020. Ce fut un moment très stressant pour nous tous, et il a fallu beaucoup de travail pour revenir à une situation où l'association a une couverture. Un élément clé que je veux rappeler, et qui était dans mon message de septembre 2020, c'est que la seule chose qui nous a permis d'obtenir une nouvelle assurance, c'est notre historique exemplaire en termes de sécurité. Tout le travail en ce sens, fait par la direction de CAR/ACF au cours des dernières décennies, est ce qui nous donne toujours le droit de voler.
4. Nous sommes chanceux d'avoir un groupe de volontaires qui nous permet de profiter de ce merveilleux passe-temps! Que ce soit les RI, RSO, ou les gestionnaires de rampes pendant un lancement, les représentants provinciaux, ou les gens avec qui j'ai servi sur plusieurs exécutifs au cours des années. Tous ont donné leur temps et rendu de grands services à CAR/ACF. Merci à tous!!

Maintenant je vais profiter de me mettre en retrait et de redevenir un fuséonaute ordinaire. Je ne vous quitte pas, et j'espère vous revoir pendant des lancements, des constructions de fusées (avec un peu de chance), et j'espère pouvoir continuer à aider de mon mieux mes collègues fuséonautes.

Je vous souhaite de bons vols à tous!

Tim Rempel

# Meet the New CAR/ACF President by Shawn Eyestone

Rocketry for me started at a young age, I believe I was around 8 or 9 Years old when I built my first rocket in the early 1980's. My older brother was into rockets and I was so excited to watch him launch his rockets, that I knew I had to have one of my own to launch. I built many model rockets in my younger days. During my teenage years I would pull out the rockets and fly a couple of them about every 2 years and than back into the box they went. Many years later my son went to a summer science camp and came home with a rocket he had built. This sparked memories of flying rockets as a kid and I pulled out the old box of rockets from under the stairs. I started flying models again and soon found out there was more than just models out there to be flown. About 10 years ago I entered into the world of high power rocketry and got my L1 certification. Since than I have achieved L3 and have plans to complete my L4 certification in the near future. During the last 5+ years I have been on the ERC executive (Edmonton Rocketry Club). I held the position of director of model rocketry for several years and have been serving as President in the club for the last couple of years.


Outside of rockets, I am a Journeyman Electrician and Automation specialist for over 20 years and currently co-own an Electrical and Automation Integration company in Western Canada. I have been married to my wonderful wife for 27 years and have 2 amazing kids who have grown up now and left the nest. My wife who has joined me on many rocket adventures started flying as well and also serves on the ERC executive as secretary. She also is a high power rocket enthusiast. We spend a lot of our spare time helping plan events, participating in launches, doing presentations for schools, youth clubs, and educational displays.

My goals are to attend as many launches as possible across Canada and get to know the rocketry community across this great country. My vision is to one day have a launch in Canada that all provinces and territories would be able to gather at and participate in.

# Message du nouveau Président de CAR/ACF par Shawn Eyestone

La fuséonautique a commencé tôt pour moi, je pense que j'avais 8 ou 9 ans quand j'ai construit ma 1ère fusée au début des années 80. Mon frère ainé s'intéressait aux fusées et j'aimais le voir les lancer, et je savais que je voulais en avoir une à moi que je pouvais aussi lancer. J'ai construit beaucoup de fusées "modèle" dans ma jeunesse. Pendant mon adolescence, je sortais mes fusées à peu près tous les 2 ans et j'en faisais voler une ou deux, ensuite elles retournaient dans leur boite. Bien des années plus tard, mon fils est revenu d'un camp d'été avec une fusée qu'il avait construit. Cela m'a rappelé mon enfance, et j'ai ressorti ma vieille boite de fusées cachée sous un escalier. J'ai recommencé à faire voler des modèles et j'ai vite découvert qu'il y avait de nouvelles possibilités. Il y a 10 ans, je suis entré dans le monde de la haute-puissance, et j'ai obtenu ma certification L1. Depuis, j'ai atteint la certification L3, et j'espère compléter ma certification L4 dans un avenir proche. Depuis plus de 5 ans, je suis sur l'exécutif d'ERC (Edmonton Rocketry Club). J'ai été directeur pour les activités de fusées modèle pendant plusieurs années, et j'ai servi comme président du club durant les derniers 2 ans.


En dehors de la fuséonautique, je suis Compagnon Electricien et spécialiste en automatisation depuis plus de 20 ans, et je suis co-propriétaire d'une compagnie dans ce domaine dans l'ouest du Canada. Je suis marié depuis 27 ans à une femme merveilleuse, et j'ai deux enfants fantastiques qui ont grandi et quitté le nid familial. Mon épouse a participé à mes aventures, a commencé à faire ses propres vols, et est secrétaire de l'exécutif d'ERC. Elle est également passionnée de fuséonautique haute-puissance. Nous passons beaucoup de temps à aider à planifier des événements, participer à des lancements, faire des présentations dans des écoles et des groupes de jeunes, et construire des affichages éducatifs.

Mon objectif est d'assister à beaucoup de lancements à travers le Canada, et apprendre à connaitre la communauté fuséonaute de ce grand pays. Ma vision est de pouvoir organiser un jour un lancement canadien où toutes les provinces et territoires pourraient se rassembler et participer!

# AARM-53
## 2023

## It's back!

**AARM 50+2 was such a success, we are going to do it again, and again, and again.....
just on a slightly smaller scale.**

The Edmonton Rocketry Club is proud to be hosting AARM-53 this summer.

AARM-53
Saturday, July 15, 2023
10:00 am - 4:00 pm.
Calmar, Alberta

One day, but possibly extended to two days.
Four events.
Mark your calendars and stay tuned by checking our website for the latest updates!

**The categories for this year's competition are:**

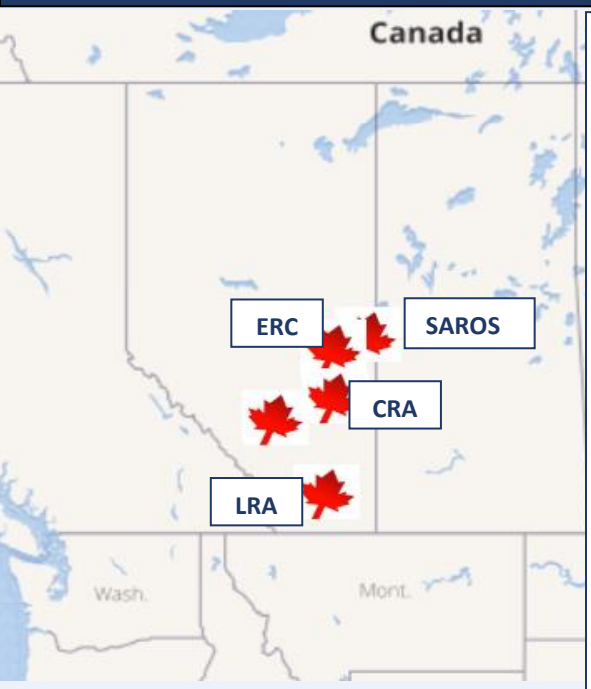
- 1/4A Parachute Duration
- B Streamer Duration
- B Boost Glide Duration
- D Eggloft Altitude

**Each category will have:**
Seniors competition, which is anyone 18 years old and up.
Juniors competition, which is under 18 years old.

All categories will be open all day for attempts. You will be allowed two attempts in each category.

Edmonton Rocketry Club

# Upcoming High-Power Rocketry Launches




## 1. Hanna 2023

(Calgary Rocketry Association):
Primary Date: 22 April, 2023
Backup Date: 6 May, 2023
Click for Details

## 2. LRA Club Launch

(Lethbridge Rocketry Association):
13 May 2023, Click for Details

## 3. Mayhem in the Skies

(NB Rocketry):
19 – 21 May 2023 (Pending Approval from CFB Gagetown)
Click for Details

## 4. Rock Lake 24

(Lethbridge Rocketry Association):
30 June – 2 July, 2023
Click for Details

## 5. Rage at the Gage 2023

(NB Rocketry):
1 – 3 September 2023 (Pending Approval from CFB Gagetown)
Click for Details

## 6. Sullivan Lake 30

(Calgary Rocketry Association):
Primary Dates: 8 -- 10 September, 2023 Backup Dates: 29 September – 1 October, 2023, Click for Details


*Launch dates and locations subject to change. Check with local clubs for final details.

# Rage at the Gage 2022 by Mark Roberts

Would you believe seventeen certifications, including all four levels, at one launch? You heard it right folks! We pulled this off at the 2022 edition of Rage at the Gage, our premier high-power launch of the year. Who? NB Rocketry, a collection of fliers from New Brunswick, Nova Scotia, Quebec, and Ontario, none other. Where? The Canadian Forces Base at Oromocto, New Brunswick, of course. When? The Labour Day weekend, September 2-4, naturally.

Nine students, including team leader Pierce Reid, from the Concordia University Institute of Aerospace Design and Innovation (CIADI) attended the launch this year with the express purpose of attaining CAR HPR certification. Eight successfully certified L1 and four went on to certify L2. It was a busy time for the CAR Atlantic Region Director, Mark Roberts, overseeing certifications! Many other members of NB Rocketry pitched in to mentor the students, inspect rockets, and help put rockets on the pads. It was a nice display of teamwork and the students' enthusiasm was greatly enjoyed.

Meanwhile, four members of NB Rocketry were hoping to nail down other certifications. Connor Gray, a regular attendee from Nova Scotia, was looking for L1 Junior certification. Evan Campbell was a L3 hopeful and both Bill Daigle and Alain Olsen planned to climb the certification ladder to the highest rung for their L4 certs. Would the weather hold? Would the motors, electronics, and recovery work perfectly? The tension was palpable!

*Figure 1 - Rage at the Gage 2022 flightline and launch prep area.*

## Fun Flyin' Friday

Given that the Base charges a flat land rental fee per day, it makes sense to maximize flying time for all three days of the launch. Accordingly, this year we made an effort to get started as early as possible on Friday knowing that range setup would take several hours. Not everyone, however, can get away early on Friday, especially those travelling from a distance. By 10 am, five of us were onsite and others arrived around noon. By mid-afternoon, we were ready to start prepping rockets. Sebastian Richard started the action by sending his trusty Wildman Shape Shifter Jr. on a CTI 435 I223 Skidmark to 3113 ft. Evan Campbell attempted his L3 certification flight with his "Mega Initiator with an Elongator" on an AT DMS J425 Redline. The rocket came down on a drogue chute and could not be found in the heavy undergrowth. Was the rocket to be found? Will Evan ever get his L3 cert? Mark Roberts finished the day's flying with an AT G79R in "Magpie," a Public Missiles Io. Thanks to a wet summer and recent rain, those camping onsite were able to enjoy social time around a campfire that night.

*Figure 2 - Evan Campbell's Mega Initiator with an Elongator takes flight.*

## Scramble Saturday

The group from CIADI descended on the Base like a swarm of bees on Saturday morning. Mark was busier than a one-armed parachute folder handling HPR exams and paperwork all day. He was exhausted and a bit grumpy when flying shut down at 7 pm. Little did he know that the CIADI students would return the favour on Sunday.

The students from Concordia CIADI accounted for most of the activity on Saturday, with five L1 cert flights and one L2 flight, all with 29 mm DMS single-use Aerotech motors, including H135W (3), H182R (1), and H195NT (New Blue Thunder – 1), and I205W. Beaudelaire completed both his L1 and L2 certs that day.

Connor Gray boosted two birds on Saturday, a LOC Weasel on an Estes E16-6 and an ancient Black Brant on a CTI G33 MY. Connor's father Paul Gray put up a LOC Goblin on a CTI J244 W for a successful L3 certification. Mario Voyer, a visitor from Quebec who returned this year after a multiple-year absence, launched his scratch built "Laissez Moi Pas Partir" on a CTI L1030 Red Lighting to 9906 ft for a very nice flight. Sebastian started the action out at the away pad in the late morning with a flight of his "Cosmic Kiss," a Wildman Rocketry Ultimate Wildman, on a CTI 4895 L1395 Blue Streak. It went to 5739 ft. Peter Clarke flew "WARP," a PML ¼ scale Patriot, on an AT I140W. According to Peter, "WARP" stands for Washademoak Area Rocketry Program. We suspect WARP is a one-person program, unless you count Peter's family who are usually present at the Rage. Yves Dufour, another frequent visitor from Quebec, put up the most exciting flight of the


*Figure 3 - Students from Concordia CAIDI are GO for launch, shooting for their CAR/ACF high power rocketry certifications.*

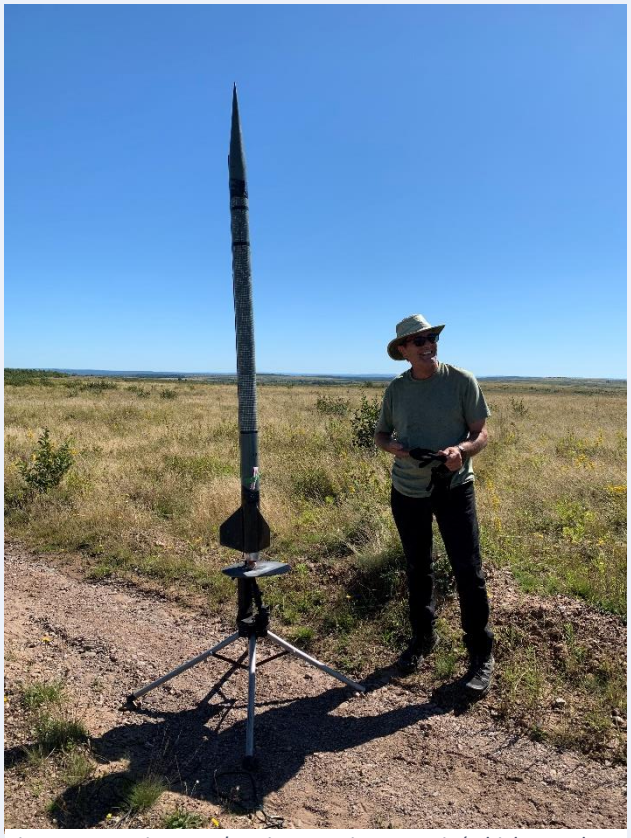


*Figure 7 - Mario Voyer's Laissez Moi Pas Partir (which translates as "Don't Let Me Go" in English).*


*Figure 6 - Paul and Conner Gray prep an LOC Goblin for Paul's Level 3 Certification attempt.*


*Figure 4 - Sebastian Richard's Cosmic Kiss is a magnificent sight to see due to its sheer size.*

*Figure 5 - Sebastian Richard's Cosmic Kiss screams skyward on a CTI L1395 Blue Streak.*

day. His scratch-built fiberglass bird, "Falco Evolution," measured 11' 7" in length and 5" in diameter. The rocket ascended nicely on a CTI 98 mm 21052 O3400 Imax motor but then experienced a rapid unscheduled disassembly (RUD) as it passed through Max Q. The nose cone was recovered some distance away thanks to a radio beacon housed inside it, but the payload section with main parachute attached and the fin can, which tumbled to the ground in different directions, could not be found. Yves left for home on

*Figure 9 - Cosmic Kiss touches the heavens above CFB Oromocto, New Brunswick in this beautiful in-flight photo.*

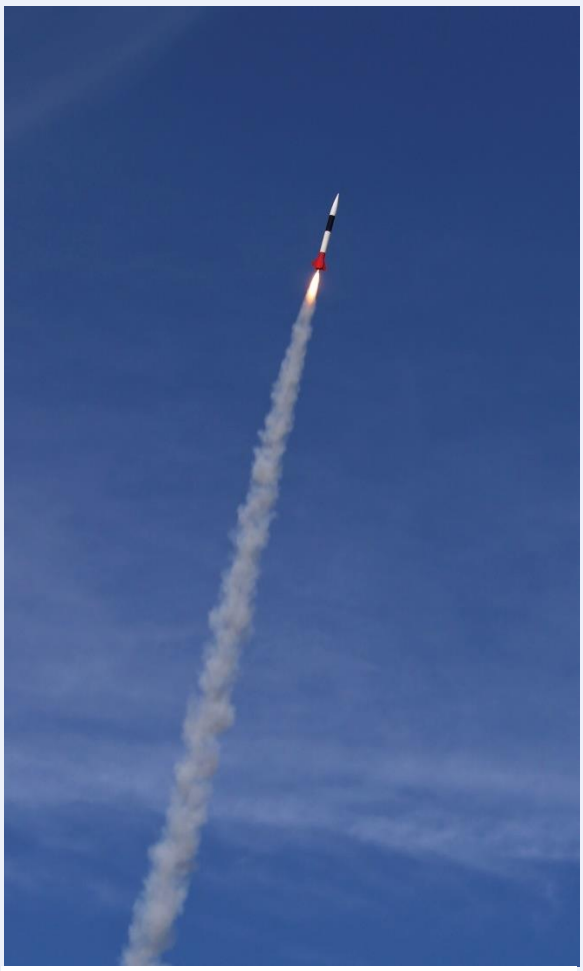


*Figure 8 - Peter Clarke flies his WARP on an AeroTech I140 White Lightning.*

Sunday empty-handed. What will become of two sections of a large rocket lying on the ground on an active military base? Will it be found years from now by another rocketeer searching for their wayward rocket or will it be ground to dust by tracked military vehicles?

Bill Daigle, who rolled out of his tent early in the morning, had been busy all-day prepping "Big Bird," his Performance Rocketry Competitor 5, for his L4 cert flight. This fiberglass beauty is just over 10 ft long and 5 inches in diameter. Bill was cool as a cucumber when he built his 75 mm CTI 5604 M1830 C-Star motor with many of us looking on. We were interested in the proceedings because we do not get the chance to build M motors very often. By the end of the afternoon, Big Bird was ready to take flight. The countdown reached zero and the button was pushed. The motor came up to thrust - the crowd watched with awed anticipation as the bird rose off the pad and climbed to 8697 ft. The up part was perfect, but would the down part be as good? Would the drogue eject at apogee? Did he put enough black powder in the ejection charge to break the shear pins and eject the chute? Everyone waited … the LCO announced, "We have an event!" Whoo-hoo! Looking good! Now for the main… A puff of smoke, a pop… Everyone held their breath as the chute came out of the airframe and began to unfurl. When the chute opened fully, congratulations in the form of cheers and applause started pouring in. But wait! Would the rocket break a fin on landing? Would it land in a distant alder thicket never to be

*Figure 12 - Yves Dufour on his way to the pad with Falco Evolution.*

*Figure 11 - Yves Dufour's Falco Evolution leaps off the pad like a homesick angel.*

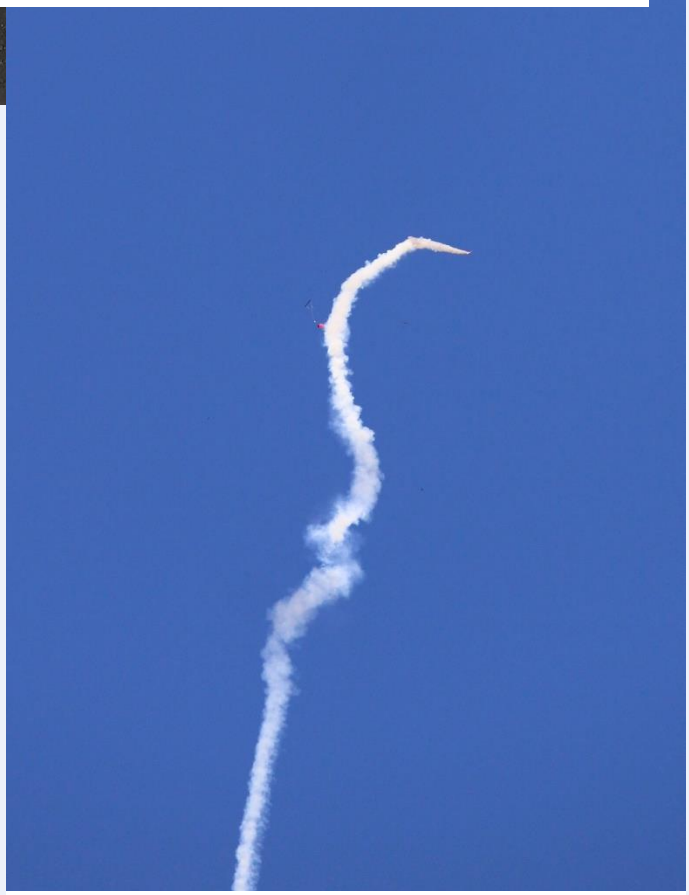


*Figure 10 - Rapid Unscheduled Disassembly (RUD) of the Falco Evolution as it passes through Max Q..*

seen again, with L4 hopes dashed? So close, yet so far! But of course, the rocket descended gently to land a short distance

*Figure 13 - Look at the size of a CTI 75mm M motor that Bill Daigle is going to use for his Level 4 certification flight!*

away without damage. Bill had his L4 certification!

Bill's flight was not the only L4 attempt of the day. Alain Olsen made the trip from Ontario to attempt his L4 certification. He had his Wildman Extreme ready to go on Saturday evening with a CTI 5198 M1101 WH. This baby was loaded with Raven 4 and Eggtimer Quantum altimeters, a RunCam camera, and a Featherweight GPS transmitter. Was the L4 attempt successful? Yes, it was! With only minutes left in the launch authorization for the day, Alain's rocket punched a hole into the evening sky. The altitude was 13,367 ft with a top speed just over Mach 1. Put your hands together for Alain. He's already talking about extreme projects for next year!

## Sittin' Pretty Sunday

Sunday turned out to be another busy day, with a total of 15 flights. The CIADI group swarmed back with four L1 attempts, again with DMS Aerotech motors, two H135 and two H195 NT. Shaili and Alexandra then followed up later in the day with L2 flights on AT I205 W motors. Joyjit, who certified L1 on Saturday, also had a successful L2 flight on Sunday on an AT I205 motor. Are these kids keen? And why not? They are aiming toward participating in Launch Canada competitions in the future.

Not one to miss out on all the action at the away pad from the previous day, Mark Roberts was out at the pad by mid-morning to set his behemoth of a rocket on the rail. The rocket: Mark's scratch-built full-scale AMRAAM. The motor: a CTI 6251 M1400 Classic. This would be only the second flight of this rocket, the first being Mark's L4 cert flight in 2019. It was a beautiful flight to 5210 ft in classic dual-deploy style. Up, down, piece of cake. What followed, however, was a hair-raising adventure in rocket recovery!

Our launch site on the Base is on a hilltop with good visibility on three sides. The terrain is rolling with deep valleys and hills where rockets can land out of sight. There are a few patches of woods but the range is mostly covered in undergrowth with scattered patches of dense alders and other shrubs. The most challenging part is that the entire


*Figure 14 - Bill Daigle poses with Big Bird before he sends her up on his CAR/ACF Level 4 Certification attempt flight.*

area crisscrossed with tank tracks, often deep, filled with water and hidden in the undergrowth.

Fortunately for Mark, three students from CIADI were in the field recovering their own rockets near where Mark's AMRAAM touched down. They noted the impact point several hundred meters from the nearest dirt track in an area of dense undergrowth and tall shrubs. Mark and the students struggled through chest-high undergrowth in the general direction of the impact point. Mark had a Beeline GPS tracker in AMRAAM but without a screamer in the rocket. OK, he should have put one in. Didn't he learn his lesson last year? One can get close and still the rocket may not be visible. This was the case here. After beating through the brush for a while, one of the students finally spotted the rocket. With two people carrying each section of the heavy rocket, they struggled through the tangle of brush and heavy vegetation toward the dirt track. At one point, Mark stepped into an invisible tank track and fell flat. As he fought to get up, a video ran through his head of the students carrying his heart attack-stricken body out. Maybe the club would scatter his ashes over the launch site next year. But he did survive to launch another day, thanks to the help of three CIADI students. Back at the launch site, Mark discovered that his wrist watch had been torn off by the brush. He was not about to go back to look for it. The next day, Mark had bruises on his thighs from using them as battering rams to get through the undergrowth. All is well that ends well and AMRAAM will fly again, next time with a screamer!

*Figure 15- Alain Olsen's Wildman Extreme undergoes preflight inspection prior to his Level 4 Certification attempt.*

*Figure 16 - A gorgeous view from 13,367 feet up above ground level aboard the Wildman Extreme!*

Back at the range, Sebastian had put up his Mac Performance Rocketry 3" diameter bird named "Serenity," on an AT K535 W, which topped out at 8231 ft. Connor Gray came back with a vengeance to try his L1 Junior certification. He let his LOC Minie-Magg loose on a CTI 163 H133 BS for a successful flight and certification. Nice to see these young folks progressing as

*Figure 18 - Mark Roberts gets ready to launch his magnificent AMRAAM on a CTI 6251 M1400 Classic.*

rocketeers! Peter Clarke flew his Estes Doorknob on a CTI F31 which separated at ejection but was successfully recovered. Paul Gray flew his LOC Goblin again, this time powered by a CTI I120 Imax.

Did Evan Campbell ever attain his L3 cert? Well, his "Mega Initiator with an Elongator" was found on Saturday evening by Sebastian using his drone to search the area where it was suspected to have impacted. Evan discovered that he had not turned the altimeter back on after installing the igniter on Friday. Oops! Fortunately, the damage was minor and by Sunday afternoon he had it back on the pad and headed skyward on a CTI J357 BS to 2349 ft for a successful cert flight. It was a happy ending for Evan.

By this time, the afternoon was wearing on. Just enough time for two more flights. And they were doozies! Tobie Boutot flew "Rocky Rocket," a scratch-built 4" diameter fiberglass job, on a CTI 1412 K530 SS for a smoking performance that the crowd loved! Mark Roberts finished the weekend of flying around 4:40 pm with "Très Impatient," his scratch-built, upscale 4" to 3" diameter LOC Norad. The very old AT 320 H268 R that he had loaded did not light on the first two tries. These old motors are notoriously difficult to light but maybe Mark was just letting the tension build! On the third attempt the motor lit – well, eventually. After a few seconds with the motor smoldering, the rocket danced on the pad, bouncing up and down several

*Figure 17 - What a beauty of a pad cam shot as the AMRAAM screams away.*

inches three or four times with a red flash each time before the motor came up to pressure. By this time, the crowd was laughing and the rocket was très impatient! It made a nice flight and was easily recovered. Rage at the Gage 2022 came to an end in a very entertaining fashion!

## Post-launch Recovery Operation

But, what about Yves' "Falco Évolution" lying in two pieces out there somewhere? Sebastian and Mark, like two dogs with a bone, could not let this rocket lie in the field abandoned and alone. We had to mount a rescue operation. It was not until six weeks later on Thanksgiving Day, however, that we were able to obtain permission to go back on the Base. Thanks to careful detective work by Sebastian "Sherlock" Richard, who examined video footage taken from his drone on the day of the launch, the location of the parachute was spotted.

*Figure 20 - Tobie Boutot's Rocky Rocket blasts off on a CTI 1412 K530 Smoky Sam rocket motor.*


*Figure 19 - Sebastian Richard is all smiles as Serenity is ready for flight.*

He and sidekick Mark "Watson" Roberts were able to walk right to the spot. With the payload portion including AV bay onboard, we started driving back home but soon turned around, having decided to go back to look for the remaining missing piece. A real shot in the dark, but why not since we were already nearby. Sebastian remembered the general direction in which the section had tumbled to the ground. We drove as far as we could on a dirt track and then started walking. Within ten minutes, we spotted the missing piece in full view on the edge of a tank track. What are the chances? Something like a needle in a haystack. The upper half had been flattened, likely run over by a tank, but the lower half containing the motor mount was intact. The retaining ring from the AeroPack motor retainer had been removed and was lying nearby. The motor casing had been removed. We suspected foul play was at work since it is unlikely that a bear or raccoon could have unscrewed the retaining ring. We called it a day.

Based on the observed flight pattern, evidence found on the ground, and subsequent analysis of video footage by Sebastian, we believe that the cause of failure was the middle airframe

*Figure 21 - Sebastian "Sherlock" RIchard and Mark "Watson" Roberts solve the mystery of the missing Falco Evolution.*

section folding just above the booster coupler. Just moments before disaster, the airframe was bent and the fins were still attached. Right after the failure, the motor was still burning. The fins also appeared to be detached and probably came off when the booster section started traveling sideways at high speed.

We considered ourselves fortunate to have found all pieces of the rocket. Sebastian shipped the useable parts back to Yves with the hope that they will come back in some reincarnated form at a future Rage at the Gage.

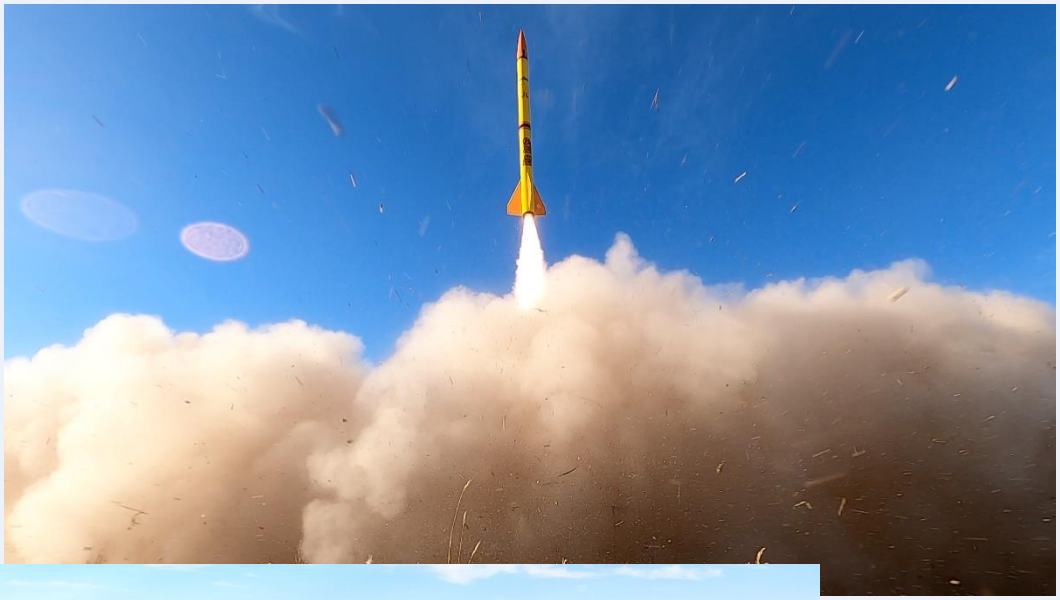
## Many Thanks

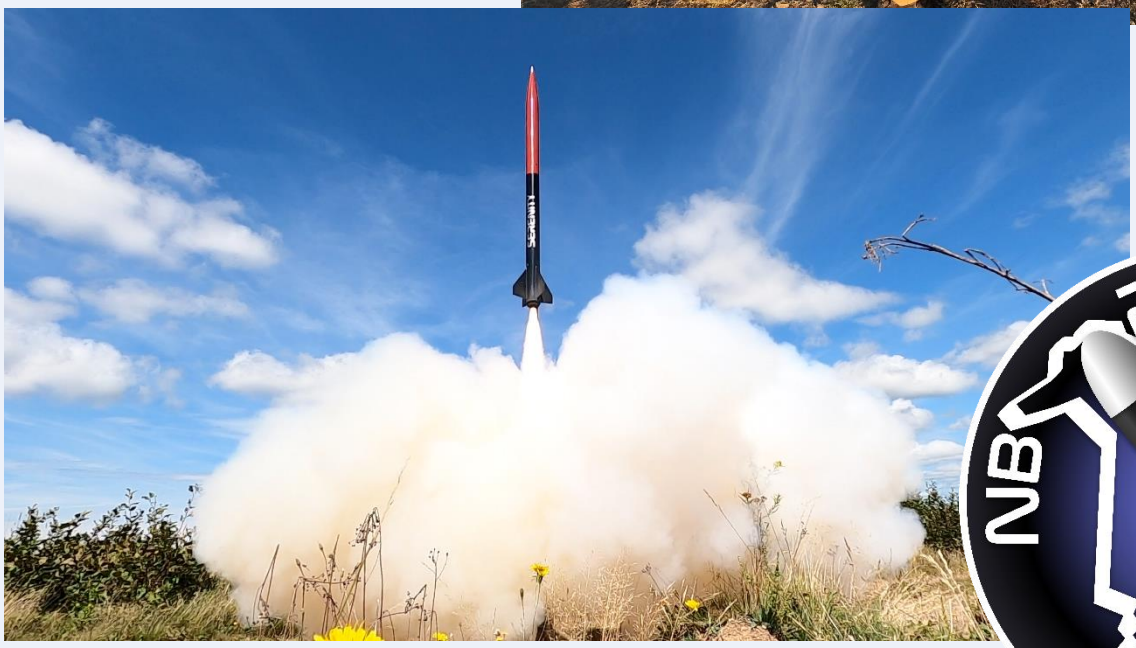
We gratefully acknowledge the efforts by the staff of CFB Gagetown for making the launch possible once again as they have for many years. We also thank the Base for providing a water tanker onsite. Many members of NB Rocketry pitched in to assist with range setup and range operations, especially assisting the CIADI students with their flights. A collective slap on the back and expression of gratitude goes out to everyone. It is indeed a privilege to be part of a group that comes together to make a rocket launch an enjoyable social event. May the Newton-seconds be with you all!

## Click here for the official Rage at the Gage 2022 Launch Video!

Article by: Mark Roberts

Photos by: Sebastian Richard






NB ROCKETRY

# Rage à la Base de Gagetown 2022 par Mark Roberts

Dix-sept certifications, couvrant les quatre niveaux, en un seul événement? Incroyable mais vrai! Nous avons réussi cet exploit pour l'édition 2022 de "Rage à la Base de Gagetown", notre plus gros événement haute-puissance de l'année. Qui ça? NB Rocketry, un groupe de fuséonautes du Nouveau-Brunswick, de Nouvelle-Ecosse, du Québec, et de l'Ontario. Où ça? A la base des Forces Armées Canadiennes de Oromocto, Nouveau-Brunswick, bien sûr. Quand ça? Du 2 au 4 Septembre, la fin de la semaine de la Fête du Travail, évidemment.

De plus, cette année, neuf étudiants de l'Institut de conception et d'innovation aérospatiales de Concordia (CIADI), dont leur chef Pierce Reid, ont participé au lancement, dans le but d'obtenir des certifications haute-puissance de CAR/ACF. Huit d'entre eux se sont faits certifier L1 et quatre d'entre eux se sont ensuite faits certifier L2. C'était occupé pour Mark Roberts, le Directeur de la Région Atlantique de CAR/ACF, qui devait gérer les certifications! Beaucoup d'autres membres de NB Rocketry se sont impliqués pour assister les étudiants, inspecter les fusées, et aider à installer les fusées sur les rampes de lancement. Ce fut une belle démonstration d'esprit d'équipe et l'enthousiasme des étudiants était un plaisir à voir!

Pendant ce temps, quatre membres de NB Rocketry espérait obtenir d'autres certifications. Connor Gray, un habitué de l'événement venant de Nouvelle-Ecosse, voulait obtenir sa certification L1 Junior. Evan Campbell était prêt pour une certification L3, et deux membres, Bill Daigle et Alain Olsen, espérait obtenir la certification la plus prestigieuse, L4. Est-ce que la météo serait clémente? Est-ce que le matériel (moteurs, électronique, système de récupération) se comporterait bien? La tension était palpable...

*Figure 22* ***– Le camp de base de l'événement "Rage à la Base de Gagetown 2022".***

## Un Vendredi de Plaisir

Vu que la Base nous facture chaque journée d'utilisation du terrain, il est logique de maximiser le temps de vol pour les trois jours de l'événement. Cette année, nous nous sommes efforcés de commencer la préparation du site le plus tôt possible le vendredi, sachant que cela prend plusieurs heures. Bien sûr, il n'est pas possible pour tout le monde d'arriver tôt le vendredi, en particulier pour ceux venant de loin. Rendu à 10:00 du matin, cinq d'entre nous étaient sur site, et les autres sont arrivés vers midi. Au milieu de l'après-midi, nous étions prêts à préparer des fusées pour être lancées. Sebastian Richard a inauguré l'événement en lançant son Wildman Shape Shifter Jr à 3113 pieds d'altitude, avec un moteur

*Figure 23 -— **Décollage du "Mega-Initiator avec Elongator" de Evan Campbell.***

CTI 435 I223 Skidmark. Evan Campbell a tenté sa certification L3 avec son "Mega Initiator avec Elongator", avec un moteur AT DMS J425 RedLine. La fusée est redescendue avec le parachute-frein, et n'a pas été retrouvée dans les broussailles. La fusée serait-elle retrouvée? Est-ce qu'Evan allait avoir sa certification L3? La journée s'est terminée avec un vol de Mark Roberts de son "Magpie", un modèle Public Missiles Io sur un moteur AT G79R. Grâce aux pluies récentes, ceux qui campaient sur place ont pu profiter d'un feu de camp ce soir-là.

## Un Samedi Occupé

Samedi matin, comme un essaim d'abeilles, le groupe CIADI de Concordia est arrivé sur site! Mark a passé toute la journée à s'occuper de la paperasse et des examens de certification haute-puissance. A la fin des vols à 7 heures pm, il était épuisé et un peu bougon. Ce qu'il ne savait pas, c'est que les étudiants de CIADI allaient l'aider le dimanche!


*Figure 24 - **Les étudiants de CAIDI Concordia sont prêts pour leurs lancements, avec des certifications haute-puissance CAR/ACF à la clé!***

La majorité des lancements du samedi ont été faits par les étudiants de CAIDI Concordia, dont cinq vols de certification L1 et un vol de certification L2, tous faits avec des moteurs 29mm Aerotech à usage unique,

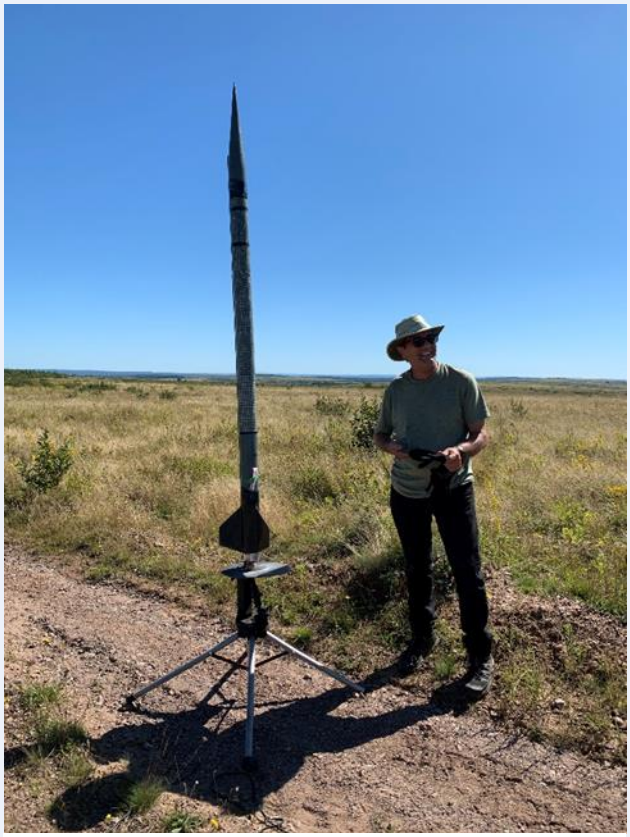


*Figure 27 -— **La fusée "Laissez-Moi Pas Partir"de Mario Voyer.***


*Figure 26 - **Paul et Conner Gray préparent un modèle LOC Goblin pour la certification L3 de Paul.***


*Figure 28 - **Le superbe modèle Cosmic Kiss de Sebastian Richard.***

*Figure 25 - **Décollage de la fusée Cosmic Kiss de Sebastian Richard, avec un moteur CTI L1395 Blue Streak.***

incluant H135W (3 vols), H182R (1 vol, H195NT (New Blue Thunder, 1 vol), et I205W. M. Beaudelaire a réussi ses certifications L1 et L2 ce samedi-là.

Le même jour, Connor Gray a lancé deux fusées, un modèle LOC Weasel avec un moteur Estes E16-6, et un vieux modèle Black Brant

*Figure 30* ***– Superbe photographie en vol de Cosmic Kiss, haut dans le ciel au-dessus de la Base de Oromocto, New Brunswick.***

*Figure 29* ***– Vol de la fusée WARP de Peter Clarke, sur moteur Aerotech I140 White Lightning.***

sur un moteur CTI G33 MY. Le père de Connor, Paul Gray, a lancé un modèle LOC Goblin sur un moteur CTI J244 W et de ce fait a réussi sa certification L3.

Ensuite, Mario Voyer, un visiteur du Québec revenu cette année après une longue absence, a lancé son projet, “Laissez-Moi Pas Partir”, avec un moteur CTI L1030 Red Lightning, pour un superbe vol jusqu’à l’altitude de 9906 pieds. Tard dans la matinée, à notre rampe de lancement la plus éloignée, Sebastian a commencé les activités avec un vol de son “Cosmic Kiss”, un modèle Ultimate Wildman de Wildman Rocketry, avec un moteur CTI 4895 L1395 Blue Streak. Cosmic Kiss a atteint l’altitude de 5739 pieds. Peter Clarke a fait voler "WARP", un modèle PML Patriot à l’échelle ¼, avec un moteur AT I140W. Selon Peter, “WARP” signifie “Washademoak Area Rocketry Program”. Nous soupçonnons que WARP est un programme d’un seul individu, si nous ne tenons pas compte de la famille de Peter qui en général l’acccompagne à la Rage. Le vol le plus excitant de la journée peut être attribué à Yves Dufour, un visiteur régulier du Québec. Sa fusée “Falco Evolution”, une conception personnelle toute en fibre de verre, mesurait 11 pieds 7 pouces avec un diamètre de 5 pouces. La fusée a bien décollé sur un moteur CTI 98mm 21052 O3400 Imax, mais a subi un désassemblage imprévu (RUD) pendant son passage à Max Q. Le cône a été retrouvé grâce à son localisateur radio, mais les autres sections (charge utile avec parachute, section inférieure avec les ailerons) n’ont pas été retrouvées. Yves est reparti le dimanche, les mains vides. Qu’arrivera-t-il à deux sections d’une

*Figure 33 -— **Yves Dufour en route vers la rampe de lancement avec sa fusée Falco Evolution.***

*Figure 32 -— **Décollage de la fusée Falco Evolution de Yves Dufour.***

*Figure 31 - **Désassemblage imprévu (RUD) de Falco Evolution pendant son passage à Max Q.***

grosse fusée sur le sol d'une base militaire? Seront-elles retrouvées dans quelques années par un autre fuséonaute, ou

*Figure 34 -* ***Bill Daigle et son moteur CTI 75mm de classe M, prêt pour sa certification L4!***

seront-elles réduites en poussière par des véhicules militaires?

Bill Daigle, s'étant levé tôt, avait passé toute la journée à préparer "Big Bird", sa fusée Performance Rocketry Competitor 5, pour son vol de certification L4. Cette beauté en fibre de verre a un diamètre de 5 pouces et est un peu plus de 10 pieds de long. Bill était très détendu pendant l'assemblage de son moteur CTI 5604 M1830 C-Star de 75mm, avec pas mal de spectateurs. Nous étions intéressé par les opérations, n'ayant pas souvent la chance d'assembler des moteurs M. Vers la fin de l'après-midi, Big Bird était prêt à voler. Au zéro du compte à rebours, l'allumage a été déclenché. Le moteur monta en puissance – et les spectateurs regardaient avec anticipation pendant que la fusée quittait la rampe et montait jusqu'à 8697 pieds. L'ascension était parfaite, mais comment serait la descente? Est-ce que le parachute-frein sortirait à l'apogée? Est-ce que la charge d'éjection serait suffisante pour casser les goupilles de cisaillement et sortir le parachute? Tout le monde attendait… et le LCO annonça, "Nous avons un événement!" C'était prometteur! Ne restait plus que le parachute principal… Un peu de fumée, une petite explosion… Tout le monde retenait son souffle pendant que le parachute commençait à se déployer. Quand il fut complètement ouvert, les félicitations commencèrent. Mais, est-ce qu'un aileron serait cassé à l'atterissage? Ou bien est-ce que la fusée allait tomber dans la broussaille dense, sans jamais être retrouvée? Mais bien sûr, la fusée se posa sans problème et sans dommage à peu de distance. Bill avait obtenu sa certification L4!


*Figure 35 -***— *Bill Daigle et sa fusée Big Bird, avant son lancement de certification L4.***

Le vol de Bill n'a pas été la seule tentative L4 du samedi. Alain Olsen était venu de l'Ontario pour tenter sa certification L4. Il avait un Wildman Extreme prêt à décoller le samedi soir, avec un moteur CTI 5198 M1101 WH. Sa fusée comportait des altimètres Raven 4 et Eggtimer Quantum, une caméra RunCam, et un transmetteur GPS Featherweight. Est-ce que sa tentative de certification L4 réussirait? Et oui! Quelques minutes avant la fin de l'horaire de lancement

pour le samedi, la fusée d'Alain s'est élancée, atteignant une altitude de 13,367 pieds et une vitesse juste au-dessus de Mach 1. Toutes nos félicitations à Alain. Il parle déjà de projets grandioses pour l'année prochaine!

*Figure 36 -* ***Inspection de la fusée Wildman Extreme de Alain Olsen, avant son lancement de certification L4.***

## Un Dimanche Mémorable

Le dimanche aussi a été occupé, avec un total de 15 vols. Le groupe CIADI est revenu avec quatre tentatives de certifications L1, toujours avec des moteurs DMS Aerotech, deux H135 et deux H195 NT. Shaili et Alexandra, un peu plus tard, ont enchainé avec des vols de certification L2 avec des moteurs AT I205 W. Joyjit, qui s'était fait certifier L1 la veille, a également passé sa certification L2 avec un moteur AT I205. Le moins qu'on puisse dire, c'est que ces jeunes sont motivés. Et pourquoi pas? Ils visent des participations aux compétitions Launch Canada dans l'avenir.

Voulant contribuer à toute l'action de la veille à la plate-forme de lancement la plus éloignée, Mark Roberts installait, en milieu de matinée, son énorme fusée AMRAAM, une conception personnelle, à taille réelle! Le moteur: un CTI 6251 M1400 Classic. C'est seulement le second vol de cette fusée, que Mark a utilisé pour sa certification L4 en 2019. Le vol a été superbe, avec une apogée à 5210 pieds et un déploiement classique en deux étapes, sans problèmes. Par contre, retrouver la fusée a été toute une aventure!

*Figure 37 -* ***A bord de la Wildman Extreme, à 13,367 pieds d'altitude!***

Notre site de lancement à la Base est sur une petite colline avec une bonne visibilité sur trois côtés. Le terrain est vallonné, ce qui permet à des fusées de se poser hors de vue. Il y a des portions boisées, mais la zone comporte beaucoup de sections de végétation dense, des aulnes et autres arbustes. Les choses se compliquent

*Figure 39 -* ***Mark Roberts et sa fusée AMRAAM, préparée avec un moteur CTI 6251 M1400 Classic.***

quand on prend en compte les traces profondes de blindés à chenilles un peu partout, souvent remplies d'eau et cachées dans la végétation.

Heureusement pour Mark, trois étudiants de CIADI étaient sur le terrain en train de récupérer leurs propres fusées près du point d'atterrissage de la fusée AMRAAM de Mark. Ils ont noté l'endroit, à plusieurs centaines de mètres du chemin le plus proche, dans une zone assez dense de broussailles et d'arbustes. Mark et les étudiants se dirigèrent dans la direction générale de la fusée, dans la végétation jusqu'au torse. Mark avait un localisateur GPS Beeline dans AMRAAM, mais pas de localisateur sonore. OK, il aurait dû en installer un, vu ses expériences de l'année d'avant. Sur ce terrain, on peut être très proche d'une fusée par terre et ne pas la voir. Finalement, après un bon bout de temps dans la broussaille, un des étudiants a trouvé la fusée. Avec deux personnes transportant chaque moitié de la fusée (vu le poids), ils se sont dirigés lentement, à travers la broussaille, vers le chemin de terre. A un moment, Mark a marché dans une trace de blindé bien cachée et est tombé par terre. Pendant qu'il essayait de se relever, il imaginait les étudiants transportant son corps... Peut-être que le club disperserait ses cendres sur le site l'année prochaine? Mais non, il a survécu, avec l'aide des trois étudiants de CIADI. Une fois revenu au site de lancement, Mark a découvert que

*Figure 38 -* ***Superbe décollage de la fusée AMRAAM, photo prise d'une caméra près de la rampe.***

sa montre avait été perdue dans la broussaille. Pas question de tenter de la retrouver. Le lendemain, Mark avait des ecchymoses sur les cuisses venant du combat avec les broussailles. Mais tout est bien qui finit bien et AMRAAM pourra voler à nouveau, et aura un localisateur sonore la prochaine fois!

Pendant ce temps, Sebastian avait préparé sa fusée "Serenity", un modèle Mac Performance Rocketry de 3 pouces de diamètre, avec un moteur AT K535 W, qui vola jusqu'à 8231 pieds. Connor Gray est aussi revenu pour tenter sa certification L1 Junior. Sa fusée Minie-Magg réussit son vol, sur un moteur CTI 163 H133 BS, ce qui lui valut sa certification! C'est toujours un plaisir de voir les jeunes progresser comme fuséonautes! Peter Clarke a fait voler sa fusée Estes Doorknob avec un moteur CTI F31, qui s'est détaché à l'éjection, mais fut quand même récupéré. Paul Gray a fait re-voler sa fusée LOC Goblin, mais cette fois avec un moteur CTI I120 Imax.

*Figure 41 - **Vol de la fusée "Rocky Rocket" de Tobie Boutot, avec un moteur CTI 1412 K530 Smoky Sam.***


*Figure 40 - **Sebastian Richard et sa fusée "Serenity", prête pour le vol.***

Et dans tout ça, est-ce que Evan Campbell a obtenu sa certification L3? Et bien, sa fusée "Mega Initiator with an Elongator" a été retrouvée samedi soir par Sebastian qui pilotait son drone pour chercher dans la zone où on pensait localiser la fusée. Evan a alors découvert qu'il n'avait pas réactivé l'altimètre après l'installation de l'amorce vendredi. Oups! Heureusement, les dommages étaient mineurs, et le dimanche après-midi, sa fusée était à nouveau sur la rampe et s'envola sur un moteur CTI J357 BS jusqu'à 2349 pieds pour un vol de certification réussi. Tout s'est donc bien terminé pour Evan.

Rendu-là, l'après-midi était bien avancé. Il restait le temps de faire deux vols. Tous les deux réussis! Tobie Boutot a fait voler "Rocky Rocket", une conception personnelle en fibre de verre de 4 pouces de diamètre, avec un moteur CTI 1412 K530 Smoky Sam, et l'assistance a adoré la trainée de fumée résultante! Mark Roberts a terminé les vols, vers 4:40 pm, avec la fusée "Très Impatient", un modèle agrandi de LOC Norad, avec une transition 4 pouces à 3 pouces de diamètre. Le moteur AT 320

*Figure 42 -* ***Sebastian "Sherlock" Richard et Mark "Watson" Roberts étudient le mystère de la fusée manquante, "Falco Evolution".***

H268 R était ancien, et ne s'est pas allumé aux deux premiers essais. Ces vieux moteurs sont réputés difficiles à allumer mais Mark cherchait juste à créer le suspense! Au troisième essai, le moteur s'alluma – éventuellement. Après quelques secondes de crachotage, la fusée commença à tressauter sur la rampe, trois ou quatre fois, avant que le moteur s'allume complètement. L'assistance rigolait mais la fusée était en effet très impatiente! Elle a fait un bon vol et fut facile à récupérer. La Rage à la Base de Gagetown 2022 s'est donc terminée de façon divertissante!

## Opérations de Récupération Post-lancement

Maintenant, qu'est-il arrivé à la fusée "Falco Evolution" d'Yves, en deux morceaux quelque part? Sebastian et Mark ne pouvaient pas en bonne conscience laisser à l'abandon cette fusée sur le site. Il fallait monter une tentative de sauvetage. C'est seulement à l'Action de Grâces, six semaines plus tard, que nous avons eu permission de retourner sur le site de la Base. Grâce au travail de détective de Sebastian "Sherlock" Richard, qui a analysé les enregistrements vidéo de son drone le jour du lancement, l'emplacement du parachute était maintenant connu. Avec Mark "Watson" Roberts, ils ont été capables de marcher directement jusqu'à l'emplacement. Nous avions maintenant la portion charge utile et les composants électroniques. Nous avons commencé à prendre le chemin du retour, puis fait marche arrière, ayant décidé de trouver la section de fusée restante. Sebastian se rappelait la direction générale dans laquelle l'autre section se dirigeait. Nous avons conduit le plus loin possible sur un chemin de terre, puis nous avons marché. Dix minutes plus tard, nous avons trouvé la section restante sur le bord d'une trace de véhicule blindé. Comme une aiguille dans une botte de foin! La partie supérieure du fuselage avait été écrasée, présumément par un blindé, mais la partie inférieure était intacte avec le montage pour le moteur. L'anneau de rétention du moteur Aeropack avait été enlevé et était encore juste à côté, le moteur lui-même était manquant. On suppose une intervention humaine, difficile d'imaginer un ours ou un raton-laveur capable de dévisser un anneau de rétention! Sur la base du comportement en vol, de la condition des composants au sol, et une analyse de la vidéo du lancement, nous croyons que l'échec du vol a été causé par l'effondrement de la section du milieu du fuselage, juste au-dessus du couplage pour la section propulsion. Juste avant le désastre, le fuselage était plié et les ailerons encore attachés. Juste après, le moteur brûlait encore, mais les ailerons s'étaient détachés, probablement quand le moteur est parti de côté à haute vitesse.

On se considère chanceux d'avoir trouvé toutes les sections de la fusée. Sebastian a expédié les pièces utilisables à Yves, dans l'espoir qu'elles reviendront, réincarnées, pour une future Rage à la Base de Gagetown.

## Remerciement

Nous remercions beaucoup l'équipe de CFB Gagetown pour avoir à nouveau rendu cet événement possible, comme elle fait depuis bien des années. Nous remercions aussi la Base pour nous avoir fourni un réservoir d'eau sur site. Beaucoup de membres de NB Rocketry se sont impliqués dans les opérations du site de lancement, incluant pour assister les étudiants de CIADI pour leurs vols. Un grand merci à tous! C'est un privilège de faire partie d'un groupe qui s'assemble ainsi pour transformer un lancement de fusées en divertissement social. Que les Newton-secondes soient avec vous tous!

Cliquer ici pour la Vidéo officielle de Rage à la Base de Gagetown 2022!

Article par: Mark Roberts

Photos par: Sebastian Richard

Traduction par: Marc Chatel

# The Thrill of a Lifetime: Kennedy Space Center by Layne C. Pelechytik

## Introduction

In November of 2022, I had flown into Florida, USA for a holiday with a number of us that started and ended in Fort Lauderdale. A few of us decided to stay a few extra days in Orlando and take in some of the local theme parks since we were so close. Myself, I had other plans. Being this close to Cape Canaveral, I decided to journey on my own to someplace I've truly wanted to go to all of my entire life: the Kennedy Space Center!

*Figure 43 - Let the excitement build!*

## The Journey

The Kennedy Space Center is the place where science fiction became science fact. It is from here the entire United States Space Program was born and functions to this very day. The sheer history surrounding this place is legendary. The Mercury, Gemini, Apollo, Space Shuttle programs all have launched from this facility and continue to do so now with the Artemis program.

I purchased a package deal through the Expedia app which included admission to the Kennedy Space Center Visitor Complex plus coach travel to and from Orlando. This admission pass gave access to the Space Shuttle Atlantis SM, featuring the Shuttle Launch Experience; the Kennedy Space Center (KSC) Bus Tour featuring the Apollo/Saturn V Center with an actual Saturn V moon rocket; 3D IMAX space films; Astronaut Encounter featuring a veteran NASA astronaut daily; Journey to Mars: Explorers Wanted; the Rocket Garden; and many other interactive exhibits.

It was about an hour's drive from Orlando to Merritt Island where the Kennedy Space Center is located. As we were crossing the Indian River Lagoon going towards Merritt Island, our tour guide pointed out the signature Vehicle Assembly Building at KSC. The building had to be so incredibly massive to be seen from this distance, yet there it was, just as plain as day. The excitement was building as I knew we were getting close.

Within a few short minutes, our tour bus turned into the Kennedy Space Center Visitor Complex. We passed a Blue Origin facility as we entered the site. From the parking lot, I could see a number of towering rockets on display. I felt like a kid in a candy store about to be unleashed! As we disembarked from the coach, all my schoolboy hopes and dreams came rushing to me. I was finally here!

Walking into the Visitor Complex, I passed a massive countdown clock, the original, used to countdown minutes and seconds before the launch of America's great launch vehicles from the days of Apollo forward. I also passed a monument of a quote made by U.S. President John F. Kennedy:

*Figure 44 - The Rocket Garden.*

*"For the eyes of the world now look into space, to the moon and to the planets beyond and we have vowed that we shall not see it governed by a hostile flag of conquest but by a banner of freedom and peace."*

After passing through the entrance and through security, I was instantly in complete awe of my view. In front of me was what is known as the Rocket Garden. In this garden of giants, one gets to explore the authentic engineering feats of technology and their tribute to the people who turned dreams of spaceflight into reality. I easily wanted to linger here for a while, but I remembered the tour guide's instructions. He recommended heading right away to the KSC Bus Tour ahead of the crowds. So, I did.


*Figure 45 - The incredibly massive Vehicle Assembly Building. The Launch Control Center is in the foreground.*

The Kennedy Space Center Bus Tour took us from the Visitor Complex right behind NASA's gates onto a fully operational NASA facility. It is here where one sees the past, present and future of America's multi-user spaceport. Our ride took us to the colossal Vehicle Assembly Building. Pictures just do no justice to how large this building actually is. The Vehicle Assembly Building is where the Saturn V's, Saturn 1B's, and Space Shuttles have been and now the Artemis Space Launch System are completely assembled and stacked before heading out to the launch complexes. On our trip around the building, we passed the Launch Control Center which is used to manage launches of launch vehicles from KSC Launch Complex 39. Attached to the VAB, the LCC contains offices, telemetry, tracking, instrumentation equipment and most importantly, the firing rooms. Firing rooms are where launch operations are controlled from. Controllers here are in control of pre-launch checks, the booster and the spacecraft before and during launch until such rocket has cleared the tower (where control is then switched over to the Johnson Space Center in Houston). The tour bus drove over the massive

crawlerway where massive launch vehicles are moved out to the launch pads in LC39. Check out the photo that shows the minute size of the man doors entering the massive VAB. Coming around the VAB, us tourists were able to get a glimpse of one of the partially hidden crawlers that was parked away. It was this same crawler that was used to transport the Artemis 1 SLS out to LC39B and back again.

*Figure 46 - The Firing Room as it appeared in the late 1960's.*

Leaving the Vehicle Assembly Building area, the bus took us to the nearby Apollo/Saturn V Center. This was going to be really sweet as tourists get to explore the Apollo Program's worldwide impact while standing underneath the largest rocket ever flown. As we entered the facility, we waited in a room where a beautiful mural of the Saturn V was displayed. Door opened at one end of the room which took us into the Firing Room from the time of the Apollo moon missions. Here, tourists get to experience what an actual Saturn V launch would have been like in the Launch Control Complex, complete with authentic launch footage and realistic launch vibrations in our seats! After this experience, another set of doors opened up and revealed the ultimate sight ever before seen.

There she was in her full glory, the Apollo Saturn V, all 363 feet of her lying on her side. We came out at the business end of the launch vehicle, where the five massive F-1 engines stared at all of us tourists. Again, pictures just don't do justice to how big this rocket really is. Nearby was the original Skylab Rescue (Apollo) Command Service Module. The Saturn V itself was separated by each one of its stages; the S-1C, the S-II, and the S-IVB. It was the forward end of the S-II stage that really made me have an appreciation for astronauts and their courage to ride one of these things. Most of a launch vehicle is fuel tanks carrying some very volatile rocket fuel. Astronauts are literally riding into space on one heck of a bomb that could go off should anything go terribly wrong. We saw what could happen back in 1986 with the Space Shuttle Challenger disaster. I've always known rockets were primarily fuel tanks, but to actually


*Figure 47 - The Apollo Saturn V! It's so big, it wouldn't all fit in the photo!*


*Figure 48 - The Estes Skylab Saturn V available for purchase at the Apollo/Saturn V Center.*

see it in person brough a whole new respect for me for astronauts who fly on these candles. Also on display here was part of the launch tower from the Apollo era, an authentic lunar module, and an actual piece of moon rock that I could touch. I can truly say I've literally touched the moon!

There was also a fitting tribute to the astronauts of Apollo 1.

In the gift shop at the Apollo/Saturn V Center was a plethora of NASA memorabilia. What I found most notable was that they were also selling Estes Limited Edition Skylab Saturn V flying model rockets, a fitting tribute to the Saturn V and to our favorite hobby. Outside of the building, I was able to go to one of the viewing areas for Launch Complexes 39A and 39B. LC39A has been converted to launch operations for the SpaceX Falcon 9 launch vehicles. And LC39B was the site of the launch of Artemis 1 just a mere five days before I got there. So close, but so far!

Jumping back on the tour bus, I left the Apollo/Saturn V Center and returned to the KSC Visitor Complex. The next stop was the Space Shuttle Atlantis exhibition hall. Outside of the exhibit was a full 1:1 scale mock-up of the Space Shuttle solid rocket boosters and external tank. Again, this was so larger than life. Here I was able to get a great photo of a gentleman standing next to one of the SRB engine bells. This truly gives a proper sense of scale as to just how big the Space Transportation System truly is.

*Figure 49 - The mock-up STS stack of Solid Rocket Boosters and External tank on display outside of the Space Shuttle Atlantis Exhibition Hall.*

Inside the exhibition hall was incredible. We were directed to an area where we watched a short introduction to the Space Shuttle program. At the conclusion of the showing, the movie screen all of a sudden changed from opaque to transparent, and there was the big reveal—the actual Space Shuttle Atlantis in all her glory! The screen opened up so we could walk through to see Atlantis up close and personal. Atlantis was big! Her cargo bay proudly displayed Canada's own contribution to the space program: the Canadarm. Our own American tour guide really bragged up the Canadarm, telling us all how truly sophisticated it was.


*Figure 50 - The very real Space Shuttle Atlantis and Canadarm deployed.*

We toured around the shuttle with our guide, with him explaining various aspects of it. For example, the tiles on the shuttle were replaced in a number of areas with thermal blankets, a more cost-efficient method of heat dissipation during re-entry. The Space Shuttle Main Engines are the same design of RS-25 engines as used on the core stage of the Artemis Space Launch System. I can surely tell you they are a tad bit bigger than an L1000W-18A!

My next stop after Atlantis was the Shuttle Launch Experience. This was definitely a favorite! This is a simulator that emulates precisely what it would feel like to ride the Shuttle from launch all the way into orbit. It's full of vibrations during the ascent while the Solid Rocket Boosters are firing. Even the U.S. astronauts themselves say this is a far more authentic simulator than anything they've trained in. It's that good!

There was also a fitting tribute to the astronauts of the Space Shuttles Challenger and Columbia. Both crews were very well represented and remembered. Here also were two pieces of debris salvaged from each incident; a left side panel from Challenger and the cockpit windows from Columbia.

Also in the exhibition hall was a fitting display regarding the Solid Rocket Boosters of the Space Shuttle. The exact same science applies to all of us using many Ammonium Perchlorate solid rocket motors back home!

Time was quickly escaping me during this visit. I obviously wanted to see as many rockets as I could. So, my next stop was back to the Rocket Garden. Here were hero rockets of old, each one a major contributor in going to the moon. Here one would find the Jupiter-C, the Mercury Redstone, the Mercury Atlas, the Gemini Titan, the Skylab (Apollo) Saturn 1B, and

others. Having owned scale flying model rockets of some of these launch vehicles were particularly interesting to me. To see and appreciate the details up close of the real thing was truly incredible.

*Figure 51 - The SA-209 Skylab (Apollo) Saturn 1B on display in the Rocket Garden.*

While these launch vehicles were big, stretching into the sky, they were also small if that makes sense. The capsules on top of these rockets were very cramped and didn't really have copious amounts of room in them. Even the Apollo Command Module wasn't the roomiest for three astronauts.

My time in the Rocket Garden was cut short by some rain showers. So, I quickly headed to the nearby Gateway pavilion, touted as the Deep Space Launch Complex. Here, I was just as amazed as I was in the Rocket Garden. The future of space exploration was right here, right in front of me. Hanging from the ceiling was a SpaceX Falcon booster used in the inaugural flight that sent Elon Musk's Tesla onto Mars. Also here was an actual used SpaceX Dragon spacecraft, the original Orion capsule, as well as Boeing's Starliner spacecraft. Numerous other beautiful models of rockets scattered the perimeter of the hall including the Vulcan, Delta IV Heavy, Atlas V, and the Artemis SLS. The Artemis apparently uses a few more O motors than the Space Shuttle—who knew?

With the rain finished, I finally got to go back to the Rocket Garden and finish my self-guided tour there.

## Conclusion

My time exploring came to an end. There is much more to experience at the KSC Visitor Center, for example the Astronaut Training Experience and Astronaut Encounter where you get to actually meet an astronaut! It can be easily a two-day visit to see everything. There are so many more photos that I have than I can share in this article too. My priority was taking in as many of the launch vehicles that I could during my visit and I was extremely pleased I got to do that. If you ever do find yourself in or around Florida, I would highly, highly recommend taking the trip out to the Kennedy Space Center Visitor Complex. It truly is the thrill of a lifetime, a childhood dream come true!

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*"THE SKY CALLS TO US." – Carl Sagan*

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Article & Photos by: Layne C. Pelechytik

# ERC Fire & Ice 2023 High-Power Launch By Ken Mueller

Hello everyone,

Another Edmonton Rocketry Club Fire & Ice High-Power Launch has come and gone but great memories remain from our event.

We had weeks of warm weather prior to our launch date set for Saturday, February 25, 2023. But, being Alberta, anything can change and it did. We had planned setting up the field at 8am but with temperatures forecasted at -28C for that time we were worried about frost bite and safety for the fliers. We decided to move the setup to 10am with a temperature closer to -17C, yes, nice and warm lol. The weather for our backup dates did not show any improvement so we decided the launch will be a go.

We setup preregistrations on our website to make it easier and faster instead of filling out the registration form and paying at the launch. We had 23 preregistered flyers out of 34 flyers. We found this worked out well and I'm sure we will do it again next year.


We had flyers from Vancouver Island, Vancouver, Saskatchewan, and Southern Alberta. Thank you all that made the trip out here to be part of our event!

Setup went well and once we had our fliers meeting; we were ready to go. Les Eyestone provided us with music throughout the day which was great. We had a mix of sun and high cloud and low winds so flights were quite easy to see.

In total we had 45 flights. 30 were high-power, and 17 of those were Certification flights. We want to congratulate all those that certified and look forward to seeing you all at another HP launch soon!

Our biggest launch of the day was our first L4 certification for Fire & Ice, by Supreena Eyestone! The flight of just under 10,000 ft and recovery were perfect. We want to send a big congratulations out to Supreena who is also the first woman in Canada to achieve a L4 certification!


Fire & Ice had a Mile High Club flight competition. This was a rocket reaching an altitude closest to 5280 ft AGL. Congratulations to Dale Madu for winning the competition which came with a certificate and a model rocket kit. Next year we will ask Dale to use the model kit he was awarded to compete so the rest of us have a chance of winning. 😉

We want to send out a big thank you to our 3 RSO's, Brad Wall, Jason Andersen and Shane Weatherill for coming out and making our event happen.

We are looking forward to next year… just hope it's a bit warmer.

Warm regards,

Ken Mueller,

Director Of High-Power Rocketry

Article & Photos by: Ken Mueller

# Supreena Eyestone's L4 Certification

By Shawn Eyestone

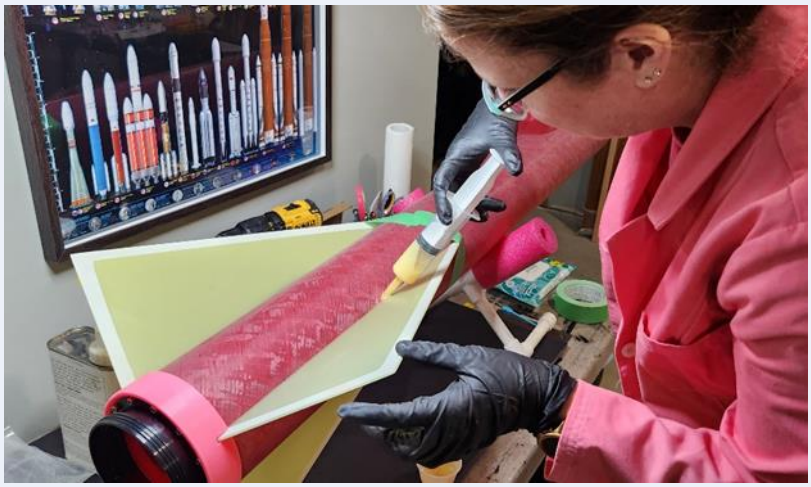

It was a very cold morning; the excitement was at full intensity. ERC Fire & Ice 2023 launch was a go, and my wife Supreena was getting ready to do her L4 certification launch.

Over the last year I watched her do an intense amount of research and preparation for this day. I was incredibly nervous for her. She had poured everything into this rocket and spent a lot of hours making sure everything was perfect.

A little background on Supreena. We have been married for 27 years, coming on 28 this August. We have 2 amazing kids (1 Boy & 1 Girl) both in their early 20's. She is a registered nurse (RN) and has worked her way to a management position with Alberta health services (AHS) over the years. She does a lot of volunteer work and will go out of her way to help anyone in need, that is just her nature. Her volunteering stretches from working in the church nursery, running games and activities at the kid's carnivals, and even taking a group of teens to Mexico for a week to help in the orphanage of a very poor part of the country. While she was there, she used her Nursing skills to help some of the less fortunate there who couldn't afford health care. Supreena also serves on the ERC committee as the secretary and helps keep everyone organized, especially me.

She also helps at all the rocketry events the ERC participates in like the TWOSE (Telus World of Science Edmonton) display and information tables, the Jasper dark skies model rocket build and launch event each year, the Calmar model launches for the ERC, and even the rocketry presentations we put on for schools. There are many other events she participates in, but the list is too long to itemize them all, so taking on the L4 certification I was curious how she would find the time.

Supreena started out flying rockets a few years back when she prompted me to paint a rocket pink. Anyone who knows Supreena, also knows her world is very pink! Anything worth having, must have pink on it. I told her that if she wanted to see a pink rocket, she would have to build it and paint it. She took this as a challenge and started building pink rockets. After building some models and then mid power rockets, all pink, she wanted to try a high-powered rocket. She flew her first cert flight along with another woman from our club and the 2 of them got their L1 certification. Because Supreena is a VERY motivated individual she right away started looking at getting additional certification levels. She never starts anything



she can't finish to the very end or highest possible level. She soon built more high-powered rockets including her L3 project which was a 4" fiberglass black brant. She had given all her rockets names like Aurora, Poppie, Bat Girl, etc. so, this black brant would only be fitting as Maleficent. Painted black with purple decals and flying on a "J" Smokey Sam motor. The black plumes just made the final touches of the flight fantastic.

Once Supreena started her L4 journey she started devoting every single moment she wasn't volunteering or working to developing her L4 package. Because I travel a lot for my business, she had some evenings to just concentrate on building her L4 package. There was a lot of evening phone conversations about new things she discovered along the way. She started explaining how she learned so much more about epoxies and application techniques with so many pros and cons of each product and techniques.

You ever want to start a huge conversation and debate with a group of high-power rocketeers, simply ask the question what is the best epoxies and techniques to use. I guarantee you will get so many different opinions and recommendations.

After many months of slaving away at package preparation than building, she was awaiting the day of the ERC Fire & Ice 2023 launch. I watched her many more times, lay out all the pieces of her rocket (Merida) on a blanket, reinspect each component and try to identify any possible points of failure. She would double, triple check every calculation, inspect, and test every connection point, as well as document every test she performed. This ritual went on for weeks leading up to the launch. Days before the planned launch date, it looked like weather was not going to be co-operative. Temps were extremely low, -30 Deg C with wind chills pushing it even lower. It looked like winds were threatening a cancelation of the launch. With just days to the date, there was an email conversation started about if we cancel or go ahead with hopes the winds and temps improve. A glimmer of hope came through as the forecast begun to improve. It was going to be cold, but the winds and skies were playing in favor of a “Go for launch!”.


The night before the big launch, she put all her electronics batteries through another charge cycle to ensure they were at peak performance. She did one last big inspection of all components to ensure they were perfect. To be honest, I think she barely slept that night. We got up early and packed the truck for the 1.5 hour drive out to Viking. It was definitely a cold morning, but the winds were very light. As I started to setup the launch site with rest of the ERC, I could see her carefully and methodically putting together Merida as she had done so many times on the blanket on the floor of our basement. As she ran through her checklists and preparation checks she was so focused and in the zone. Soon she emerged from the prep trailer with Merida ready to fly. After going through all the final checks and RI’s, she began her trek out to the pad. At this point pass or fail didn’t matter, I was so proud of how hard she had worked and prepared. She literally had a check list of absolutely everything possible for preparing for launch. Once at the pad, she loaded Merida ever so carefully onto the rail and started her at the pad check list. She armed

her electronics and backup electronics, made sure the tracker was transmitting data and started to add her ignitor. She hooked up the leads, took a deep breath and checked the continuity. Everything was set. When she looked over at me the look was of excitement with a tinge of nervousness. She doesn't like to be the center of attention and now everyone was watching her and her rocket.

As the countdown started, 5…4…3...2…1…. She squeezed my hand so hard and then it happened. The motor lit and she soared off the pad perfectly, straight as an arrow towards the sky. It was an amazing launch. As the tracker poured back the data it was a textbook flight. As the crowd watched the skies Merida performed like a rockstar! First drogue at apogee and then a textbook main deploys at 1000'. As the crowd cheered and pointed at Merida returning to earth so perfectly Supreena finally took a deep breath, and it looked like she was going to almost cry she was so excited. I was so proud of her and her accomplishment! As soon as Merida softly landed back on earth, the range opened, and we hopped on the sled to go retrieve it. She had landed so gently on the snow it was perfect. It was literally picture perfect! She collected Merida into the sled and returned her back quickly to the launch site for final inspection. WAY TO GO SUPREENA! You earned every single part of that accomplishment with the dedication and determination you poured into that launch. I am SO proud of you!

Article & Photos by: Shawn Eyestone

# Earthrise is About YOU, the Rocketeer! By Layne C. Pelechytik

Earthrise is the voice and heart of the CAR/ACF membership; it is a publication highlighting what's going on in the world of rocketry right here in Canada.

I believe in this publication and greatly desire to see it continue and grow. Currently, Earthrise is published two times per year. As such, I am always on the lookout for articles and/or photos pertaining to CAR/ACF activities. Article ideas might include coverage of launches, how-to articles, rocketry experiences, rocketry research, new products and product reviews, rocketry building threads, special projects, rocketry news, club spotlights, and so on. You don't have to be a polished writer to put something together. Each and every article/photo is a story. People want to hear/see your stories!

What I look for is content almost solely based on CAR/ACF activities. If you're a CAR/ACF affiliated club, that means you're most certainly included in acceptable activities to get published. I like to keep the national membership apprised of the many major launches occurring across Canada throughout the year. In fact, Edmonton Rocketry Club puts together awesome posters for their major launches, such as Fire & Ice. Earthrise would be a perfect medium to share that kind of information.

Advertising is also available within the pages of Earthrise. Inquire at the email address below for more information.

If you have any questions or inquiries about Earthrise, or wish to electronically submit an article and/or photos, please feel free to contact me at earthrise@canadianrocketry.org. I look forward to hearing about what's going on in your world of rocketry!

Are you still sitting on the fence about contributing to Earthrise? Well check this out! Every contributor towards an issue of Earthrise will now have their name thrown into a pot and the lucky prize winner to be drawn will receive a gift certificate courtesy of CAR/ACF as a thank you for your contribution! That's better odds than the lottery! So, get on those articles and photo albums for the next exciting issue. The next gift certificate just might be yours!

This issue's winners are Mark Roberts and Sebastian Richard for their contribution of Rage at the Gage 2022. Mark and Sebastian will both be receiving $50.00 gift certificates each to the Canadian Rocket Store (www.allrockets.ca). Congratulations, guys!

# Earthrise c'est pour VOUS, le Fuséonaute! Par Layne C. Pelechytik

Earthrise, c'est la voix des membres de CAR/ACF; c'est une publication centrée sur les activités de fuséonautique partout au Canada.

Je crois en cette publication et je désire la voir continuer et grandir. Actuellement, Earthrise est publiée deux fois par année. Dans ce contexte, je recherche toujours de nouveaux articles et/ou des photos reliées aux activités de CAR/ACF. Un article, par exemple, peut couvrir un événement de lancement, des explications sur la construction, des expériences en fuséonautique, de la recherche, des évaluations de produits, des projets spéciaux, l'actualité en fuséonautique, des infos à propos d'un club, etc. Il n'est pas nécessaire d'être un écrivain confirmé pour écrire un article. Chaque article ou photo a de la valeur. Les membres veulent connaître vos histoires!

Je recherche du contenu basé presque exclusivement sur les activités CAR/ACF. Si vous faites partie d'un club affilié à CAR/ACF, il est presque certain que vos activités sont appropriées pour une publication. J'essaie de garder nos membres au courant des lancements majeurs de l'année à travers le Canada. Par exemple, le Club de fuséonautique d'Edmonton (ERC) prépare de superbes posters pour leurs lancements majeurs comme "Fire & Ice". Earthrise est un moyen parfait de partager ce genre d'information.

Earthrise peut également inclure des publicités. Pour plus d'information, communiquez avec l'adresse de courriel ci-dessous.

Si vous avez des questions sur Earthrise, désirez publier un article et/ou des photos, ou pour plus d'information, n'hésitez pas à me contacter à earthrise@canadianrocketry.org. J'espère avoir des nouvelles à propos de ce qui se passe chez vous en fuséonautique!

Si vous n'êtes pas encore convaincu de contribuer à Earthrise, lisez bien! Désormais, chaque contributeur à un numéro de Earthrise aura son nom inclus dans un tirage, et le gagnant ou la gagnante du tirage recevra un certificat cadeau de CAR/ACF en remerciement de sa contribution! Vos chances sont meilleures qu'à la loterie! Donc, mettez-vous au travail avec vos articles et vos albums photo pour le prochain numéro. Le prochain certificat cadeau pourrait être pour vous!

Pour ce numéro de Earthrise, les gagnants sont Mark Roberts et Sebastian Richard pour leur article "Rage à la Base de Gagetown 2022". Mark et Sebastian vont chacun recevoir des certificats cadeau de $50.00 utilisable au Canadian Rocket Store (www.allrockets.ca). Félicitations, messieurs!

# What is CAR/ACF?

## CAR/ACF Mission

The Canadian Association of Rocketry is a world-class association of rocketeers organized for the purpose of promotion, development, education and advancement of amateur aerospace activities. The Association provides access, leadership, organization, competition, communication, protection, representation, recognition, education and scientific/technical development for its members.

## CAR/ACF Vision

We, the members of the Canadian Association of Rocketry are the pathway to the future of amateur aerospace and are committed to making rocketry the foremost sport/hobby/activity in the world. This vision is accomplished through:

- A dedication to safety and responsibility
- Partnerships with its valued associates, the aerospace industry and government
- Development of programs that meet or exceed Canadian government regulatory requirements
- A process of continuous improvement
- A commitment to leadership, quality, education and scientific/technical development
- A safe, responsible and enjoyable aerospace development environment.

## More about CAR/ACF

- CAR/ACF was established in 1965
- CAR/ACF is a self-supporting, non-profit organization whose sole purpose is to promote development of Amateur Aerospace as a recognized sport and worthwhile amateur activity.
- CAR/ACF is an organization open to anyone interested in legal and responsible rocketry.
- CAR/ACF is the official national body for amateur aerospace in Canada.
- CAR/ACF is a chartering organization for model rocket clubs across the country. CAR offers its' chartered clubs contest sanction and assistance in getting and keeping flying sites.
- CAR/ACF is the voice of its' membership, providing liaison and certification programs with Transport Canada, Natural Resources Canada (Explosives Regulatory Division), and other government agencies through our national headquarters in Calgary, Alberta. CAR also works with local governments, zoning boards and parks departments to promote the interests of local chartered clubs.
- CAR/ACF is the principal stakeholder representing Non-military, Non-commercial aerospace on the Transport Canada Canadian Aviation Regulatory Advisory Council (CARAC) which is responsible for maintaining and developing the Canadian Aviation Regulations (CARS).
- CAR/ACF is a Rocketry Association whose rules and regulations as formally acceptable to the Minister of Transport.

# Qu'est-ce que l'ACF?

## Mission de l'ACF

L'Association canadienne de fuséonautique est une association de classe mondiale organisée dans le but de promouvoir, développer, éduquer et faire progresser les activités aérospatiales amateurs. L'association fournit accès, direction, organisation, concurrence, communication, protection, représentation, reconnaissance, éducation et développement scientifique / technique à ses membres.

## Vision de l'ACF

Nous, les membres de l'Association canadienne de fuséonautique, sommes la voie de l'avenir de l'aéronautique amateur et nous nous engageons à faire de la fusée le sport / loisir / activité la plus importante au monde. Cette vision est réalisée à travers:

- Un dévouement à la sécurité et à la responsabilité
- Des partenariats avec ses précieux collaborateurs, l'industrie aérospatiale et le gouvernement
- Un développement de programmes qui respectent ou dépassent les exigences réglementaires du gouvernement Canadien
- Un processus d'amélioration continue
- Un engagement envers la direction, la qualité, l'éducation et le développement scientifique / technique

## En savoir plus sur l'ACF

- L'ACF fut établie en 1965.
- L'ACF est une organisation autonome à but non lucratif dont le seul objectif est de promouvoir le développement de l'aéronautique amateur en tant que sport reconnu et en tant qu'activité amateur valable.
- L'ACF est une organisation ouverte à toute personne intéressée par les fusées légales et responsables.
- L'ACF est l'organisme national officiel de l'aérospatial amateur au Canada.
- L'ACF est une organisation membre de clubs de fusées miniatures à travers le pays. L'ACF offre à ses clubs affiliés sanction et assistance pour obtenir et conserver des sites de vol.
- L'ACF est la voix de ses membres et fournit des programmes de liaison et de certification avec Transports Canada, Ressources naturelles Canada (Division de la réglementation des explosifs) et d'autres agences gouvernementales via son siège national à Calgary, en Alberta. L'ACF collabore également avec les administrations locales, les conseils de zonage et les départements des parcs pour promouvoir les intérêts des clubs à charte locaux.
- L'ACF est le principal intervenant représentant l'aérospatiale non-militaire et non-commerciale au sein du Conseil consultatif de la réglementation de l'aviation canadienne (CCRAC) de Transports Canada, qui est chargé de maintenir et d'élaborer le Règlement de l'aviation canadienne (DORS/96-433).
- L'ACF est une association de fusée dont les règles et règlements ont été officiellement acceptés par le ministère des Transports.

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**Rear photo/photo de résumé:**

Alain Olsen's *Wildman Extreme* lifts off on a CTI 5198 M1101 WH on a Level 4 Certification flight.

La fusée Wildman Extreme de Alain Olsen décolle avec un moteur CTI 5198 M1101 WH pour un vol réussi (et superbe!) de certification L4.