


ANNUAL REPORT 2018

H.R. MacMillan Space Centre Society





Image: The Starry Night
Credit: Vincent Van Gogh
Image Source: courtesy of the Google Art Project



“For my part I know nothing
with any certainty, but
the sight of the stars makes
me dream.”

— Vincent Van Gogh, *Painter*

Front Cover Image: Picturing the Sun's Magnetic Field
Credit: NASA/SDO/AIA/MSAL
Image Source: flickr.com/photos/gstc/25513206790/

Front Cover Image: Outbound View of Jupiter
Credit: NASA JPL
Image ID: PIA22425

The background of the entire page is a light gray field filled with small, faint dots representing stars. Overlaid on this are several constellations, each represented by a series of larger, darker gray dots connected by thin, light gray lines. These constellations are scattered across the page, creating a celestial theme.

OUR MISSION

To educate, inspire, and evoke a sense of wonder about the universe, our planet, and space exploration.

OUR VISION

An inspired and imaginative community connecting society, culture, and science to facilitate experiences that are...
like nothing on Earth.

OUR VALUES

Wow · Innovation · Collaboration · Community



Image: A SpaceX Falcon 9 rocket exits the atmosphere
Credit: REUTERS/Joey Roulette
Image Source: pictures.reuters.com/archive/SPACE-ARTIFICIALINTELLIGENCE-RC1544532120.html

Message from the Board Chair and Executive Director

SHAPED BY OUR COMMUNITY

Our Strategic Plan has been the foundation for launching exciting new projects and strengthening existing programs and services this year. New additions to our collection of programs such as podcasts, dance and music performances, film and visual arts have taken us well beyond science demonstrations. Adding non-traditional programs to our delivery is one way we are reaching further to meet important needs in our community. Our community partnerships have allowed us to expand on our existing strengths in knowledge-sharing and story-telling and make such collaborations possible.

This past year, our 50th Anniversary year, we saw the H.R. MacMillan Space Centre Society continue its transition into a modern and collaborative space. We have worked with partners like *Stop Podcasting Yourself*, *Voirelia: A Dance, Psychology, and Philosophy Hub*, *Sustainability Group*, *City of Vancouver*, *Knowledge Network*, *First Robotics Club*, *Vancouver Lego Club* and many more to create new and engaging programs. The creation of these vibrant and innovative programs allows the H.R. MacMillan Space Centre Society to continue to meet community needs and adapt to evolving service approaches.

Our staff take great pride in finding new ways to reach individuals and communities and, most importantly, to inspire connection and growth. From podcasts and musical performances, to science literacy and rocket workshops, the H.R. MacMillan Space Centre Society has had many memorable achievements in 2018.

We hope you see your community and our impact reflected in this report. In the past, we've often let numbers define the value of non-profit/public organizations. While we have a lot to be proud of in our numbers, we also know our impact on our community extends well beyond the number of programs we deliver or the number of people through our doors. It is wrapped up in the growth and wellbeing of our community, and every individual community member. This value can be found in day-to-day moments: uplifting interactions, widened perspectives, and ideas brought to life.

We're still sharing our 2018 statistics here with great pride. You'll also notice that we've made this report into its own "story" of sorts. Inside this report, you'll find some shining moments from the past year. This is a collection of stories from the people who bring our organization to life. Stories from you. Stories take us to new places, show us who we are, and remind us of all that is possible. We're all authors of this unfolding space and science story, and you tell it best.



Matthew Anthony
Board Chair



Raylene M. Marchand
Executive Director

OUR BOARD

Our Board is comprised of 10 proud community members who share their skills and talents to help us achieve organizational excellence.

BOARD OF DIRECTORS

Matthew Anthony, Chair
Keith Acton
Dr. Aaron Boley
Jonathan Burke
Eric Hopkins
Derek Lew
Larkin MacKenzie-Ast
Eric Pringle, Past Chair
Greg Stanway
Roger Watts





PARTNERS & SUPPORTERS

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Young Canada Works
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Engineers and Geoscientists of BC
Heidemarie Stefanyshyn-Piper
Jarrett Plett
Knowledge Network
Let's Talk Science
Louise Burns
Metro Vancouver Parks
Michael Van Den Bos
MineralsEd

Museum of Vancouver
NASA
Outer Rim Garrison, 501st Legion
Owen Connell
Prince George Railway and
Forestry Museum
Royal Astronomical Society of
Canada - Vancouver
Royal Astronomical Society of
Canada - Prince George
Sarah Morris
Science World British Columbia
SCISS
SFU Faculty of Education
SFU Satellite Design Club
Smithers Exploration Group
Starlit Citadel
Stop Podcasting Yourself
- Graham Clark & Dave Shumka
Surrey School District
The Borealis Quartet
The Djavad Mowafaghian Centre for
Brain Health
The Exploration Place
The Flame
The Planetary Society
Thomas Beckman
Two Rivers Gallery
UBC Department of Physics
and Astronomy
UBC Faculty of Education
UBC Faculty of Science
UBC Orbit Satellite Design Team
UBC Student Astronomy Club
UBC Teacher Education Office
University Cubesat Program
US Consulate General Vancouver
Vancouver Academy of Music
Vancouver Lego Club
Vancouver Maritime Museum
Voirelia: Dance, Psychology and
Philosophy Hub

CORPORATE PARTNERS

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Psychological Association
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Red Truck Beer Co.
Tap Media Labs
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Glenn and Annetta Agnew Memorial
Fund (Vancouver Foundation)

Anonymous and
Point of Light (99)

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PATRON

Mrs. G.T. (Jean) Southam, C.M.

ENDOWMENT FUND

Vancouver Foundation

MEDIA SPONSORS

Breakfast Television
Corus
Crisp Media (Vancouver Mom)
CTV Morning Live
Family Fun Media
Fresh Hat Media (YoYo Mama)
Global
Google
Lamar
Outfront Media



REFLECTING OUR COMMUNITY

We're here to answer the call of our community, responding to needs by finding new niches for our programs and service. We embrace all opportunities to bring the Space Centre experience to new groups of people in unique and surprising ways...

ENCHANTMENT UNDER THE STARS

Nothing says romance like a starry sky and beautiful music. For Valentine's evening we integrated live music by Louise Burns & The Young Mopes with a tour through the universe to create a romantic evening under the stars.

TRUE STORIES FROM THE PALE BLUE DOT WITH THE FLAME

Collaborating with The Flame we co-produced an evening of storytelling that took our audience through a range of emotions as local storytellers shared their true short stories under the stars.

QUANTUM INKBLOT: PERCEPTION OF REALITY THROUGH PHYSICS, PSYCHOLOGY, AND ART

With Voirelia: Dance, Psychology and Philosophy Hub we explored quantum physics, psychology, visual arts and dance and the surprising connections between them. The event included two contemporary dance pieces that interpreted quantum physics and the psychology of flow, a multimedia piece that transformed the planetarium star theatre into a theatre of innerspace, and conversations between psychologists and quantum physicists that wove connections between them.

MAY THE 4TH BE WITH YOU

Our inaugural Family Cosmic Night was marked by a visit from Darth Vader and his storm troopers (courtesy of Vancouver's 501st Legion Outer Rim Garrison). Our fun-filled evening event was a great opportunity for everyone to unleash their inner Chewbacca and celebrate life in a galaxy far, far away.

STOP PODCASTING YOURSELF

Three-time Canadian Comedy Award-winning podcast *Stop Podcasting Yourself* hosts Graham Clark and Dave Shumka joined us for an evening of comedic tales through time and space under a visual display in the planetarium star theatre.



LOOKING TO OUR PAST BUILDING OUR FUTURE

The H.R. MacMillan Space Centre Society celebrated our 50th Anniversary in 2018 in partnership and collaboration...

HOLST'S *THE PLANETS* WITH THE VANCOUVER ACADEMY OF MUSIC

To mark our anniversary the Vancouver Academy of Music invited us to participate in their performance of Gustav Holst's suite, *The Planets*, at the Orpheum theatre. To accompany the iconic music we produced a suite of breathtaking images conveying the majesty and beauty of the planets through stunning visuals from the Hubble Telescope, and Cassini and Juno spacecraft.

LIFE IN THE UNIVERSE

Inspired by the vision of Holst, we worked with local composer Thomas Beckman to create a modern-day suite that is a tribute to contemporary astronomy. Inspired by the provocative question, is there life in the universe beyond Earth?, we created a visual journey exploring the potential for life in our universe which was scored by Beckman. The world premiere of the suite was performed in the planetarium star theatre by Thomas Beckman, (solo viola), the Aurora String Quartet and percussion (Christopher Blaber, Jarrett Plett).



HONOURING OUR PAST

With the help of a long serving volunteer, Nicole-Ann Poitras, and our first archivist, Rachel Carlson, we gathered stories of our past achievements and memorable moments from collaborators and staff. In addition, we created a digitized compilation of historical articles and resources from our own collection and archives and brought Harold the Star Projector out of retirement for a brief cameo appearance in our planetarium star theatre shows over our anniversary weekend.

REACHING FURTHER A RESOURCE FOR EVERYONE

We have a lifetime of experience in sharing and story-telling, and we're committed to providing access to diverse ideas, programs, and experiences. With input from our community, we are constantly expanding the range of things we share...

GEORGES MÉLIÈS' **A TRIP TO THE MOON (1902)**

We think of space as reflected through contemporary film such as *Gravity* or *The Martian*, but space has been a theme in film since its inception. We watched three classic films by French cinematographer Georges Méliès, "A Trip to the Moon" (1902), "The Astronomer's Dream" (1898), and "The Eclipse" (1907) with live music composed and performed by Owen Connell. With each film we discussed the cultural impact and science of the day with film historian Michael Van Den Bos and astronomer Christa Van Laerhoven.

UNIVERSE OF THE BRAIN

This was our second year partnering with the Djavad Mowafaghian Centre for Brain Health. The series is an opportunity for neuroscience researchers to bring their data and research to life in the planetarium star theatre.

OUTDOOR LIGHTING STRATEGY PUBLIC CONSULTATION

We worked with Vancouver city staff from the Sustainability Group to host an evening of programming focused on light pollution and the city's draft outdoor lighting strategy. The evening provided an opportunity for Vancouverites to celebrate the night skies and learn more about light pollution and the City's draft outdoor lighting strategy.

SUMMER LIBRARY TOUR

Working with libraries and librarians in northern British Columbia, we brought our STEM programming to 11 communities as part of the libraries' summer reading program. Programming included an opportunity for kids and librarians to build electrical circuits. As part of the program we donated circuit kits to each library so kids and librarians could continue to program STEM education.



OUR SPACE YOUR SPACE MY SPACE

Since
1968

There once was a space science centre filled with quiet corridors. Outside the walls was a bustling community of people of all ages and backgrounds with endless expertise, interests, and needs. These heroic characters were creating, singing, leading, exploring.

Over the years, they began living out new adventures inside the space science centre. As they requested more services, added new ideas,

and shared their talents, the space science centre morphed and grew. The space science centre listened to what its community wanted and needed, and with every new adventure, more light, sound, and life began to flood its corridors.

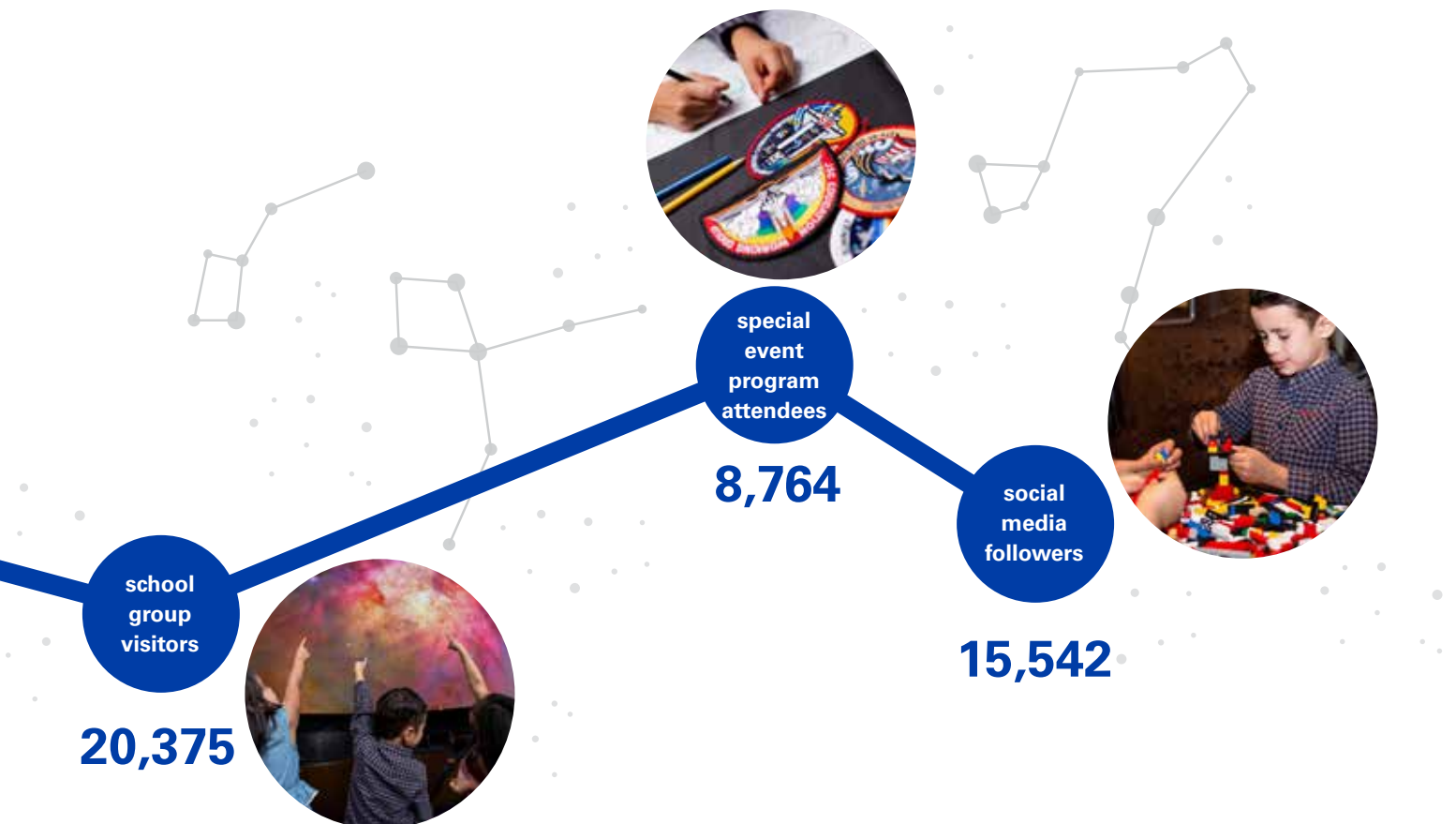
Our Space Centre is your Space Centre. It's a never-ending story, just waiting to be told. While some say "happily ever afters" are things of fairy tales, we're lucky that a new one happens here every day.



2018

annual
visitors

126,420



Partner Spotlight Sponsored By Chevron

POPPING UP WHERE YOU ARE

The Space Centre has been working with a new and engaging STEM teaching tool called an Ozobot for about 4 years, with the generous support of Chevron. An Ozobot is a little robot that blends the physical and digital worlds and teaches kids programming. The company bills the Ozobot as the world's tiniest robot and that fact along with its bright blinking LED lights and sounds has sent many of our Ozobots on extended travels ...here is a story about our little friends...

We use this STEM tool for both classroom, public open houses and our summer library tours across Northern BC. Our travels take us too many small and rural communities where these little robots connect instantly with all ages. The robots follow along a path drawn by the human and begin turning, spinning and speaking depending on the 4 colour combo of black, red, blue, green felt markers. The unique feature of our little Ozobots is that they travel to events in a clear toolbox where each individual robot sits on a protective sponge pillow. This toolbox is great especially in a bustling elementary classroom as it helps us identify if all our Ozobots are ready to head to the next classroom!

The first time an Ozobot went missing was on our Summer Library Tour at a rural library just outside of Prince George. We

packed up after a fun engaging workshop and the tool box had one empty spot. Thinking it had just rolled under the book self or into another box, our interpreter searched high and low for our robot. With no success, he handed over our contact details and penned an email to us back home letting us know the first robot had disappeared on tour. He went on to say that, he was not optimistic it would in fact return. We are happy to say he was proved wrong and in fact, the saying, "the cat came back" is true for both felines and Ozobots.

The first missing Ozobot was returned to the local library about a month after it went missing. A very confused mother came to the front desk to say that she had found this while cleaning her son's room and knew it did not belong under a

pile of socks and asked if it had a home elsewhere. Imagine our surprise when our Ozobot returned a week later in a small padded envelope!

Our Ozobots have had extended community stays five other times in various communities in the north. We are happy to report that each time they have all returned home! One was returned with a hand written apology and a few words on what an important lesson this was in not taking what doesn't belong to them. Another returned by way of the inter - provincial library loan traveling van. Another was left on the doorstep of the centre where we held our evening event in a non-identifiable paper bag and a typed message saying they were so sorry for taking the robot. Our Ozobots have very interesting travels and although it takes some longer than others, they have always returned home.



A LAUNCH POINT FOR GROWTH

Through updates to our spaces, thoughtfully designed programs, dedicated staff and volunteer members, and additions to our services, we nurture and inspire learning, connection, and growth...

MOVING TO MARS

We spent our Spring Break taking visitors to Mars with community partners including Daedelos Enrichment Programs (Robots in Space), Let's Talk Science (Food in Space), and Engineers and Geoscientists BC and University Cubesat developers (Engineering in Space). During their time with us visitors explored ideas behind what it would take for humans to live on the red planet. The highlight for visitors was their 'trip' to Mars where they became the first human inhabitants on Mars during the planetarium star theatre show *Our Martian Neighbourhood*.

COSMIC NIGHTS

Our adult-only evening series is an evening of fun with other like-minded space geeks. Each event explores a theme in-depth with the help of scientists who are expert in the field. In 2018 we delved into the nature of the universe, celebrated the 50th anniversary of the first human in space, learned about the newest asteroid sample mission, OSIRIS REx, and explored the potential of ice worlds to support life.

NEW EXHIBITION UPGRADES

50 Years of Space in Vancouver

We installed a temporary exhibit celebrating our past 50 years in Vancouver. The exhibit highlighted the changing technology used to create planetarium star theatre shows, treasures from our archives and a look behind the scenes of planetarium show production.





Mars Explorer Exhibit

Working with local companies NGX Interactive and Agro Arts, we created an exhibit that turns our visitors into Martian geologists—their challenge is to navigate the Martian terrain while looking for and analyzing the landscape for signs of water and possible life forms.

Perspective: David Saint Jacques's Mission on the International Space Station

In celebration of Canadian astronaut David Saint Jacques we developed a small temporary exhibit outlining his six month mission on the International Space Station. You can even have your picture taken with him (or his 'cut out').

Knowledge Network's Space Suites

This year Knowledge Network has kindly provided us permission to screen their beautifully produced Space Suites in the Cosmic Courtyard gallery.

Image: Curiosity Self-Portrait at Okonuso Drill Hole
Credit: NASA ID: PIA20602



OUR STAFF

People are at the heart of all we do, and our staff and volunteer members put the “heart” in all we do.

Our staff members go above and beyond the call of duty creating outstanding experiences for community members through every interaction.

With over 50 employees handling 200 thousand in-person and on-line interactions with our community every year, the human element drives everything we do. And it is our staff who determine the guest experience.

MANAGEMENT

Raylene M. Marchand
Executive Director

Lisa McIntosh
Director of Learning

Mirjana Galovich
Director of Fund Development

Samaneh Badiei
Director of Finance

Annika Penner
Director of Human Resources
and Operations

VOLUNTEERS

Arman Athwal

Bryon Elliot

Karen Lee

Rob Lo

Vida Morkuna

Nicole-Ann Poitras





STAFF

Simran Badial
Matthew Beaudoin
Stephane Bernard
Colleen Bignell
Greg Bricknell
Matthew Cimone
Jasmine Coble
Fennie Easton van der Graaf
Therese Edwards
Patrick Fergusson
Mackenzie Fleming
Anton Friedman
Jonathan Fung
Jessica Gerlach
Shannon Gilchrist
Daniel Gowryluk
Erin Green
Derek Greenway

Ella Guzman
Kashifa Hafeez
Katherine Kelly
Christine Henderson
Raphael Kepinski
Derek Kief
Dicle Kolukisa
Mike Kozniak
Crystal Lai
Kenneth Lui
Jason McRae
Casey Mok
Mark Moraes
Trish Pattison
Meg Pinto
Shelley Preston
Jamie Purves
Hikari Rachmat

John Reid
Peter Richard
Skeerat Sahota
Jawad Sakarchi
Jaswinder Sandhu
Gayle Seaman
Lucy Smith
Olga Sokolovska
Allan Soone
Terry Soone
Cheryl Sweeney
Michelle Sz
John Tanner
Jonathan Teague
Michael Unger
Charlene Wee
Sophie Yamauchi



Image: The Soyuz MS-08 spacecraft
Credit: REUTERS/Shamil Zhumatov

Image Source: reuters.com/news/picture/launching-into-space-idUSRTS100L2

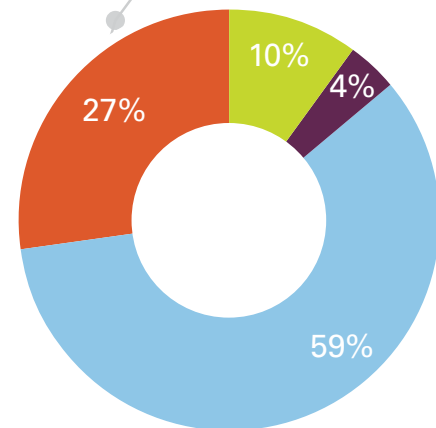
2018 FINANCIAL SUMMARY

The H.R. MacMillan Space Centre Society is proud to be funded in part by the City of Vancouver and the Province of British Columbia. Additional funding is received to support special activities including outreach programming, student hiring grants, and Vancouver Foundation Endowment interest support. The society also generates revenues through admissions and programs, special events, facility rentals and services, and fundraising.

REVENUES	\$
H.R. MacMillan Space Centre Generated	1,147,134
Municipal Grant	519,400
Special Projects and Donations/Gifts	189,500
Provincial Grant	75,000
TOTAL	1,931,034

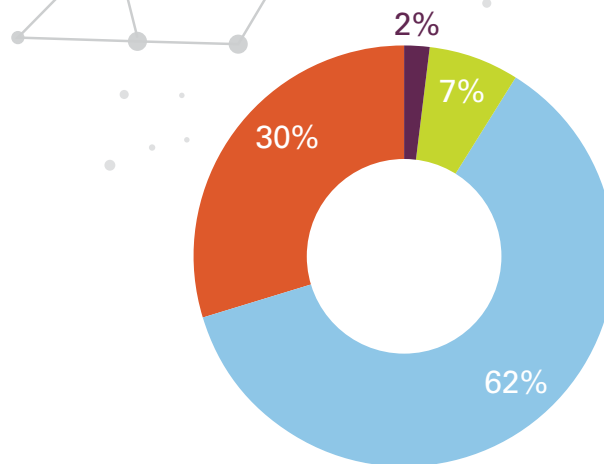
EXPENDITURES	\$
Department Expenses	1,168,575
Programs and Services	556,804
Special Projects	132,065
Amortization (Net of Deferred Capital Contribution)	29,722
TOTAL	1,887,166
SURPLUS	43,868

Revenues



- H.R. MacMillan Space Centre Generated
- Municipal Grant
- Special Projects and Donations/Gifts
- Provincial Grant

Expenditures



- Department Expenses
- Programs and Services
- Special Projects
- Amortization Net of Deferred Capital Contribution

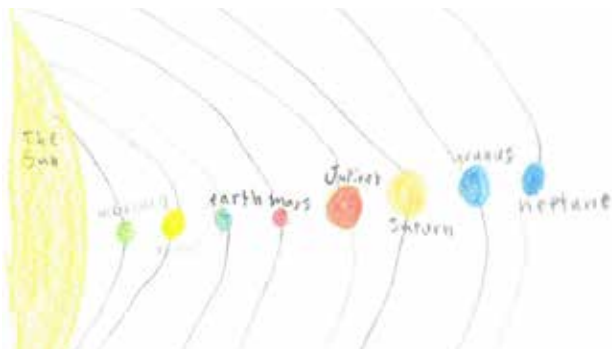


WE LOVE THE WAYS YOU USE THE SPACE CENTRE

Our board...our volunteers...our staff...our guests...
our community...

We have been honoured that for over 50 years we have had amazing shared experiences with our guests, engaging in thousands of conversations about all things space! We have been privileged to listen to your stories, hear your comments, laugh and simply have fun with you. It has been a pleasure to serve each and every person.

Here are some of the ways we remember our past and some of the ways you show and tell us about your experiences with us...a story through time...



Thank you so much for the trip.
I enjoyed the model of the ISS,
Michael Collins space suit and
the moon rock. Alas, that was a
ginormous engine. I really
enjoyed it and will be back
again soon.

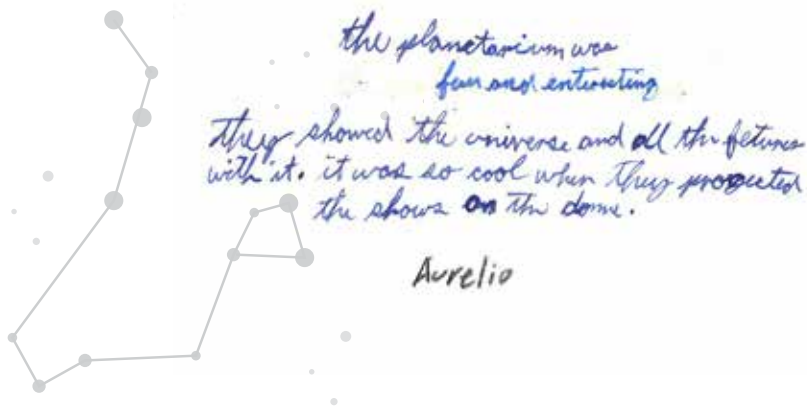
Erin Nicholas

1968

"I'll never forget his (H.R. MacMillan) first site visit. The elevators to the Planetarium floor had been recently installed and lined with dark oak paneling... Hard hats on, we entered the elevator and began our ascent. H.R. looked closely at the wood paneling, then at me and growled - - that's not BC wood! Now being from southern Saskatchewan I didn't know oak from bamboo, but I remember the sweat breaking out on my forehead as the others winced. Happily, he got over that."

- David Roger, Executive Director





"My partner and I thoroughly enjoyed the evening. He's a space buff and I'm a film lover so we both enjoyed the night to no end and didn't want to go home! Please, please, please do something like this again!!!!"

- Georges Melies Attendee

2007

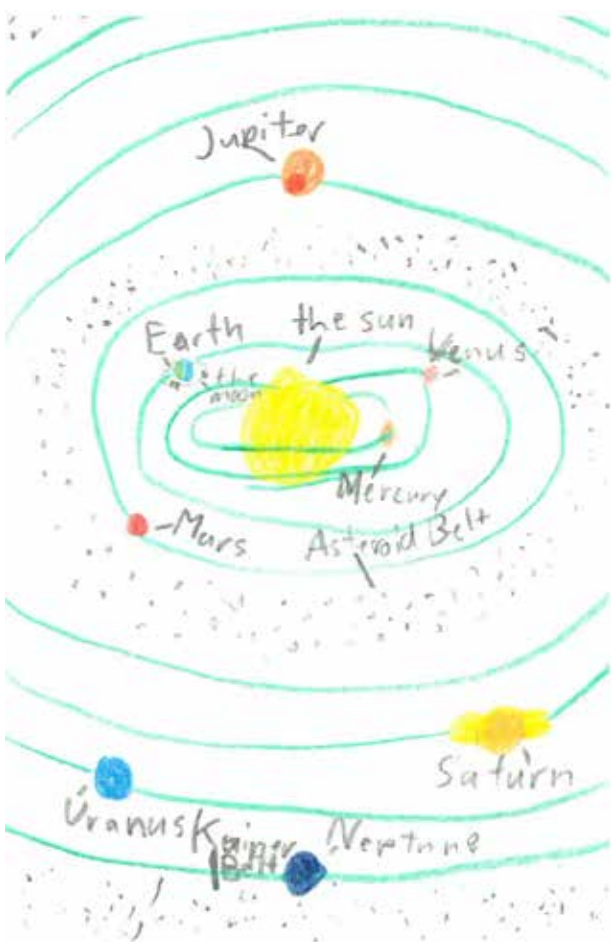
"I was pretty impacted by the project of making Sky Stories (the Space Centre's only Indigenous focused show). It was probably one of the more challenging projects I had ever undertaken and I think that when I went into it, I didn't necessarily foresee that...and I learned a lot. It really helped to validate a way of knowing in a community that felt broader than I was used to sharing within – it did change a lot of my own understanding and how I saw things, and I appreciated the stories and everything that was shared by the collaborators."

- Margaret Grenier, Indigenous Educator



"I have come to 4 of these now and every time I learn something new and always enjoy the event. I think my favourite part (other than the planetarium show) is getting to do paintings! It's like getting to be a kid all over again!"

- Cosmic Night Beyond the Universe Attendee



Back Cover Image: Earth Enveloped in Airglow
Credit: NASA
Image Source:
www.nasa.gov/image-feature/earth-enveloped-in-airglow

Back Cover Image: ISS Solar Transit
Credit: NASA
Image ID: NHQ201810070003



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