

Canadian planning for the International Year of Astronomy 2009

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Abstract

Professional and amateur astronomers in Canada are working together to strengthen — and form new — partnerships with the formal and informal education communities, as well as Aboriginal, arts and cultural organisations: “*To offer an engaging astronomy experience to every person in Canada, and to cultivate partnerships that sustain public interest in astronomy.*” Our ideas have much in common with those of other IYA nations, especially our US neighbour with whom we enjoy close liaisons through the AAS, but we do seek to exploit unique Canadian opportunities.

Philosophy

Our efforts are characterised by:

- Strong focus on achieving impact lasting well beyond 2009 in the majority of programmes undertaken.
- Providing activities that are accessible in both French and English.
- Leveraging and strengthening existing efforts and avoiding “reinventing the wheel”.
- Leadership by volunteers: as of yet there are no paid staff dedicated to IYA, as much as they are needed.
- Encouragement of individual, grassroots initiatives.
- A goal of increasing awareness among young people of science and technology career opportunities.

Broad themes

Our specific programme ideas can be grouped under three broad themes with strong emphasis on connecting with young people:

- *Reconnecting With the Sky*: star parties, material for educators and kids, visiting dark sky sites and creating new ones, etc.
- *Canadians at the Frontiers*: national planetarium shows, national lectures by outstanding researchers who are also gifted public speakers.
- *Astronomy in Society*: first nations and Inuit traditional knowledge, astronomy in Canada’s multicultural society, collaborations with arts and entertainment organisations.

³ Ruth-Anne Chicoine (CSA), Jeffery Crelenstein (The Impact Group), Jayanne English (CASCA & U. Manitoba), Peter Jedicke (RASC & Fanshawe College), Rémi Lacasse (FAAQ), Pierre Lacombe (FAAQ & Planétarium de Montréal), Robert Lamontagne (CASCA & U. de Montréal), Phil Langill (U. Calgary), Lindsay Marshall (CBU), Bob McDonald (broadcast journalist), John Percy (CASCA & U. Toronto), Scott Young (RASC & The Manitoba Museum), Andy Woodsworth (NSERC)

Teams across Canada are preparing funding proposals to implement specific programmes, including:

- A proposal led by the RASC for >1M Canadians to enjoy “Galileo moments”, and to promote astronomy as widely as possible with help from their centres and other outreach programmes (Guides, Cubs, Scouts), with associated handouts and resources.
- Creation and distribution of a student astronomy kit including the Galileoscope.
- A focus on Aboriginal knowledge of the heavens.
- Creation and promotion of dark sky sites across Canada.
- Planetarium and science centre productions including *Galileo Live* with actors and new material proposed for Canada’s 5 major planetariums.
- Heavenly arts and entertainment collaborations being explored at local and national levels.
- A fully scripted four-hour mini-series connecting astronomy with history, art, and literature, as well as promoting the end-to-end value to society of “dark skies” and re-connection with the night sky is under review by broadcasters.
- Postal stamp and commemorative coin proposals are awaiting decisions in 2008.

Partners

- Canadian Astronomical Society (CASCA)
- Royal Astronomical Society of Canada (RASC)
- Fédération des Astronomes Amateurs du Québec (FAAQ)

Collaborators

- Planetarium and science centre communities
- National science reporter for the CBC
- Canada’s Aboriginal communities
- National Research Council (NRC)
- Canadian Space Agency (CSA)

Two examples of encouraging early success

1. Collaborations with Canadian arts communities

- Two national musical organisations are commissioning major new works based upon Galileo and astronomy.
- Youth concerts on themes of Galileo, astronomy and music written by Victoria Symphony Music Director Tania Miller to be performed in Victoria, Vancouver, Toronto.
- Symphonies across Canada are encouraged to perform Holst’s *The Planets* and Estacio’s *Solaris* accompanied by astronomical imagery.

All such programming offers rich opportunities for sky viewing in collaboration with amateur and professional astronomers.

2. Canadian Aboriginal participation

From their home on the east coast, where the light of each new day is first received and then journeys westward across our country, Cape Breton University's Integrative Science Programme and the Mi'kmaq College Institute are leading efforts to reach out to all Canada's Aboriginal peoples to invite collective participation in IYA2009 celebrations. They have formally engaged with their local Membertou First Nation and the Unama'ki Institute of Natural Resources to create the essential basis for national outreach and planning with Canada's diverse First Nations communities.

Under the Integrative Science approach (see Figure 1) Aboriginal and western stories of our interactions with and within nature are being captured. As we reach out across the country to encourage Aboriginal participation in IYA celebrations, we envision three major thrusts:

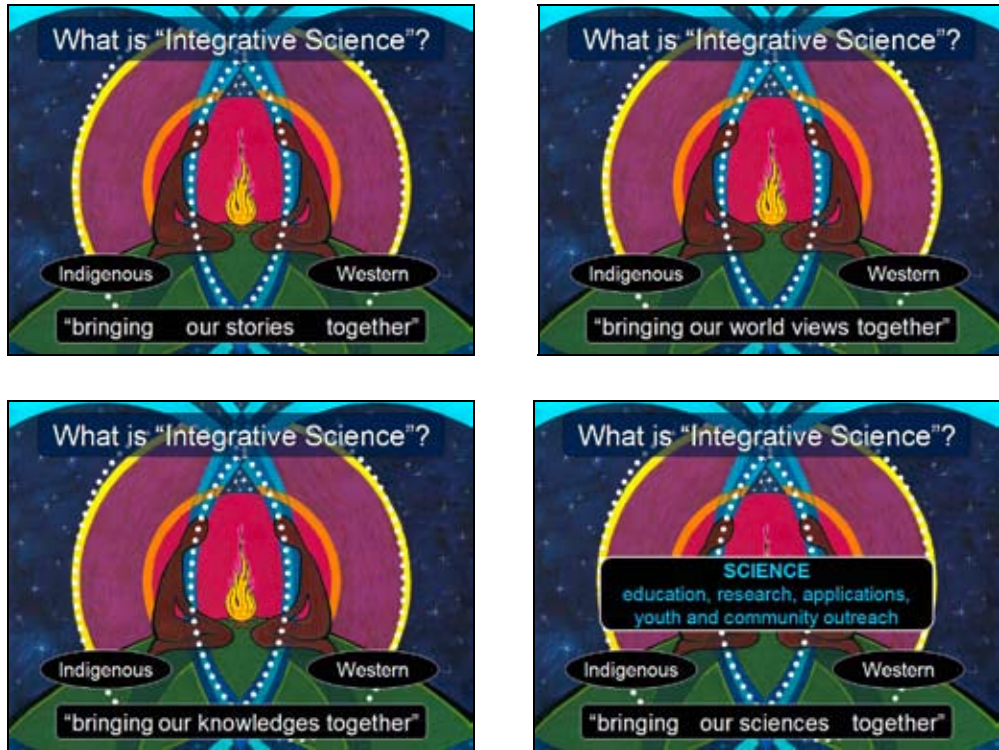
- a) Collective compilation of night sky stories from across Canada, with respect to one or more particular constellations,
- b) Collective encouragement of dark sky preserves across Canada, and
- c) Highlighting educational opportunities and pathways for young Aboriginals interested in science through strong participatory opportunities locally and within the K-12 school systems in Aboriginal communities across Canada.

The encouraging lesson to date is how appealing IYA2009 opportunities are proving to be to new partners and collaborators, and how modest initiatives by individuals pursuing personal interests can create far-reaching impact. Our progress may be tracked online².

Acknowledgements

We thank Michael Peddle (NRC-HIA) for his invaluable creative assistance with our poster and presentation for CAP2007, John McDonald (RASC Victoria Centre) for permission to use his photograph of the 2007 Saskatchewan Star Party in our poster, and Basma Kavanagh (CBU) for creation of Figure 1 and other materials we displayed in Athens.

² www.astronomy2009.ca or www.astronomie2009.ca



Cape Breton University

Figure 1 – Illustration by artist Basma Kavanagh of the principles of respectful dialogue that underpin integrative science education at Cape Breton University. Developed in close collaboration with Elders, the programme provides an environment in which Aboriginal youth have the opportunity to view the natural world through traditional and Western scientific eyes.



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ASTRONOMY 2009



THE UNIVERSE : YOURS TO DISCOVER

Canadian IYA Planning

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Communicating Astronomy with the Public
Athens, Greece
9 October 2007



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GOAL

Professional and amateur astronomers working hand-in-hand to strengthen – and form new – partnerships with the formal and informal education communities, as well as Aboriginal, arts and cultural, and other organizations

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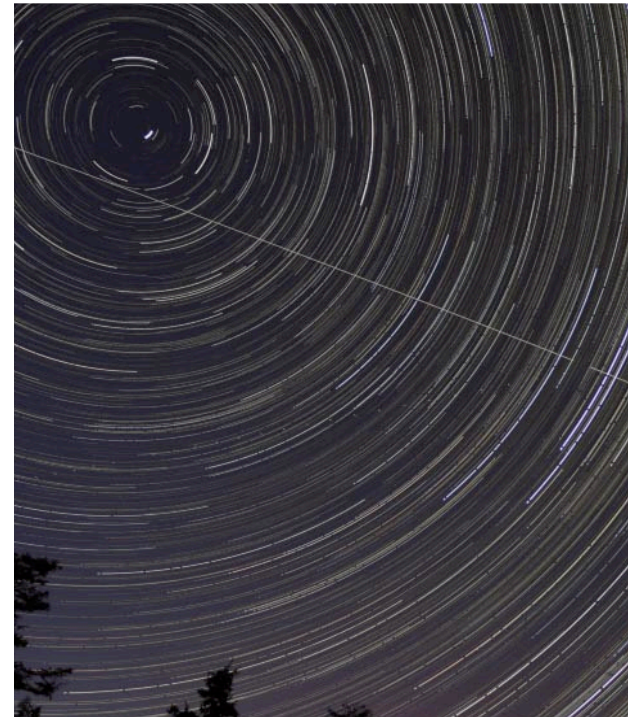


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GOAL

“to offer an engaging astronomy experience to every person in Canada, and to cultivate partnerships that sustain public interest in astronomy.”



Philosophy

- Strong focus on impact beyond 2009
- Activities accessible in both French and English
- Leverage, strengthen existing efforts, not reinvent the wheel
- Efforts led by volunteers
- Encourage individual, grassroots initiative
- Increase awareness among youth of S&T career opportunities

Major Themes 1

Our Coordinating Committee selected these:

- 'Galileo Moment'
Experiences for >1M
Canadians
- Student Astronomy Kit
(Galileoscope, etc.)
- Aboriginal Knowledge of the
Heavens



Major Themes 2

- Dark-Sky Preserves Across Canada
- Planetarium and Science Centre Productions
- Heavenly Arts and Entertainment Collaborations
- Canadian Astronomers at the Research Frontiers



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Organization

Our Partners

- Canadian Astronomical Society (CASCA)
- Royal Astronomical Society of Canada (RASC)
- Fédération des Astronomes Amateurs du Québec (FAAQ)



Our Collaborators

- Planetarium and science centre communities
- The national broadcaster (CBC)
- Canada's Aboriginal communities
- National Research Council (NRC)
- Canadian Space Agency (CSA)



NRC - CNRC



Examples of Early Success 1

Collaborations with the arts communities

- Two national musical organizations commissioning major new works based upon Galileo & astronomy
- Youth concerts written by Victoria Symphony Music Director Tania Miller – performances in Victoria, Vancouver, Toronto
- Major symphonies expressing interest in Holst's *The Planets* and Estacio's *Solaris* accompanied by astronomical imagery
- All offer opportunities for sky viewing, outreach

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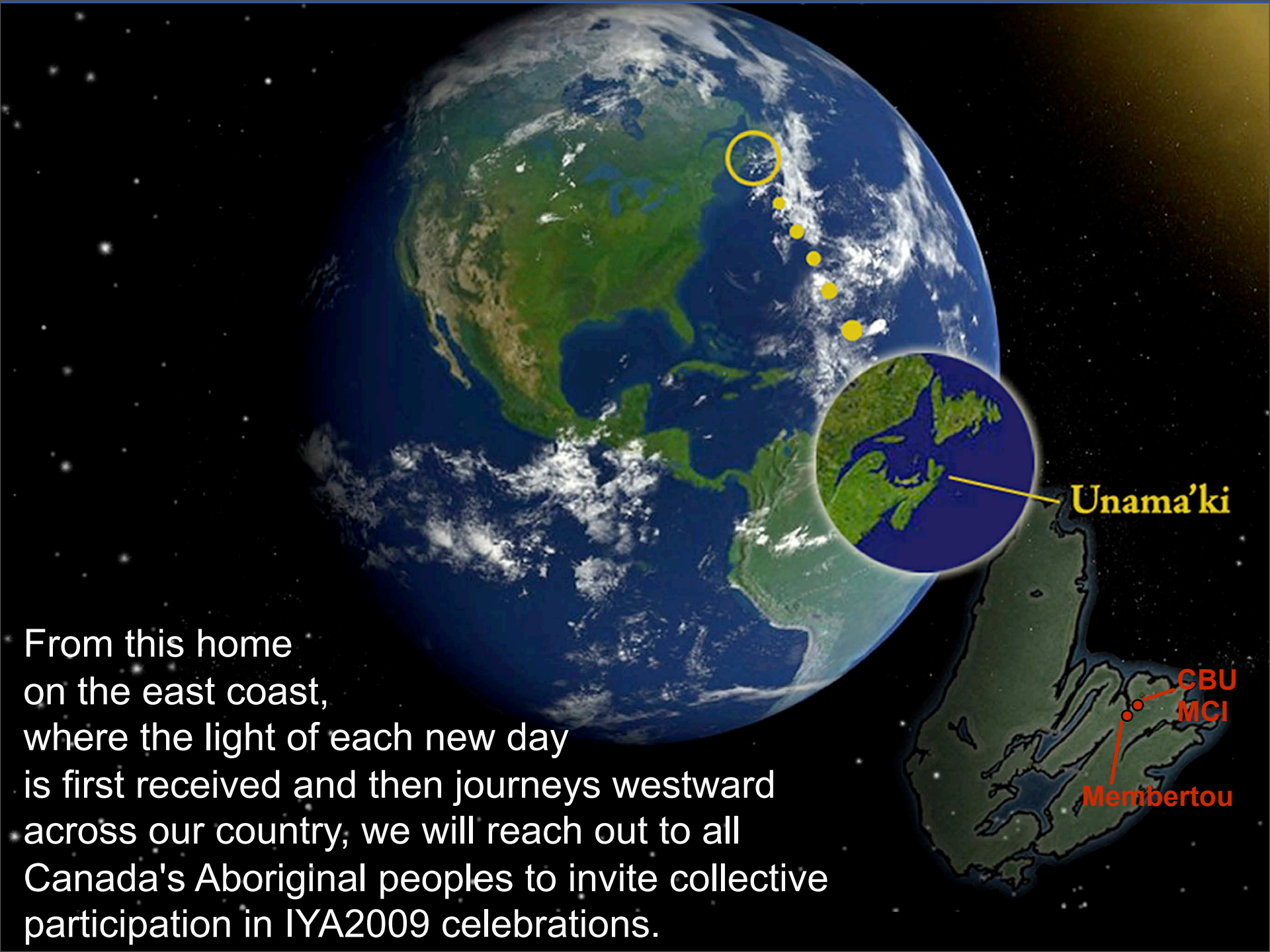
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Examples of Early Success 2

Canadian Aboriginal Participation

Cheryl Bartlett, Canada Research Chair
Integrative Science, Cape Breton University

Lindsay Marshall, Associate Dean
Mi'kmaq College Institute, Cape Breton University
Sidney, Nova Scotia



From this home on the east coast, where the light of each new day is first received and then journeys westward across our country, we will reach out to all Canada's Aboriginal peoples to invite collective participation in IYA2009 celebrations.

Unama'ki

**CUB
MCI**

Membertou

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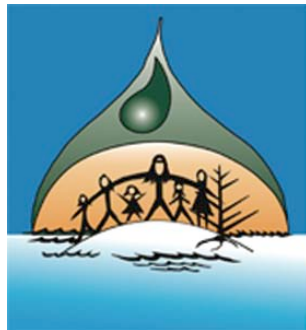


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Partners

Aboriginal Science Organization

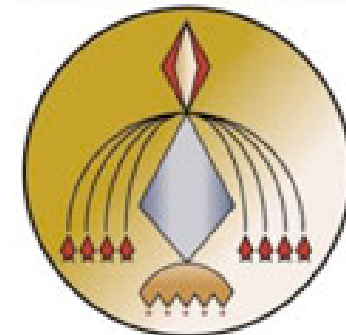


**UNAMA'KI
INSTITUTE OF
NATURAL
RESOURCES**

Unama'ki Institute of Natural Resources

Aboriginal Community

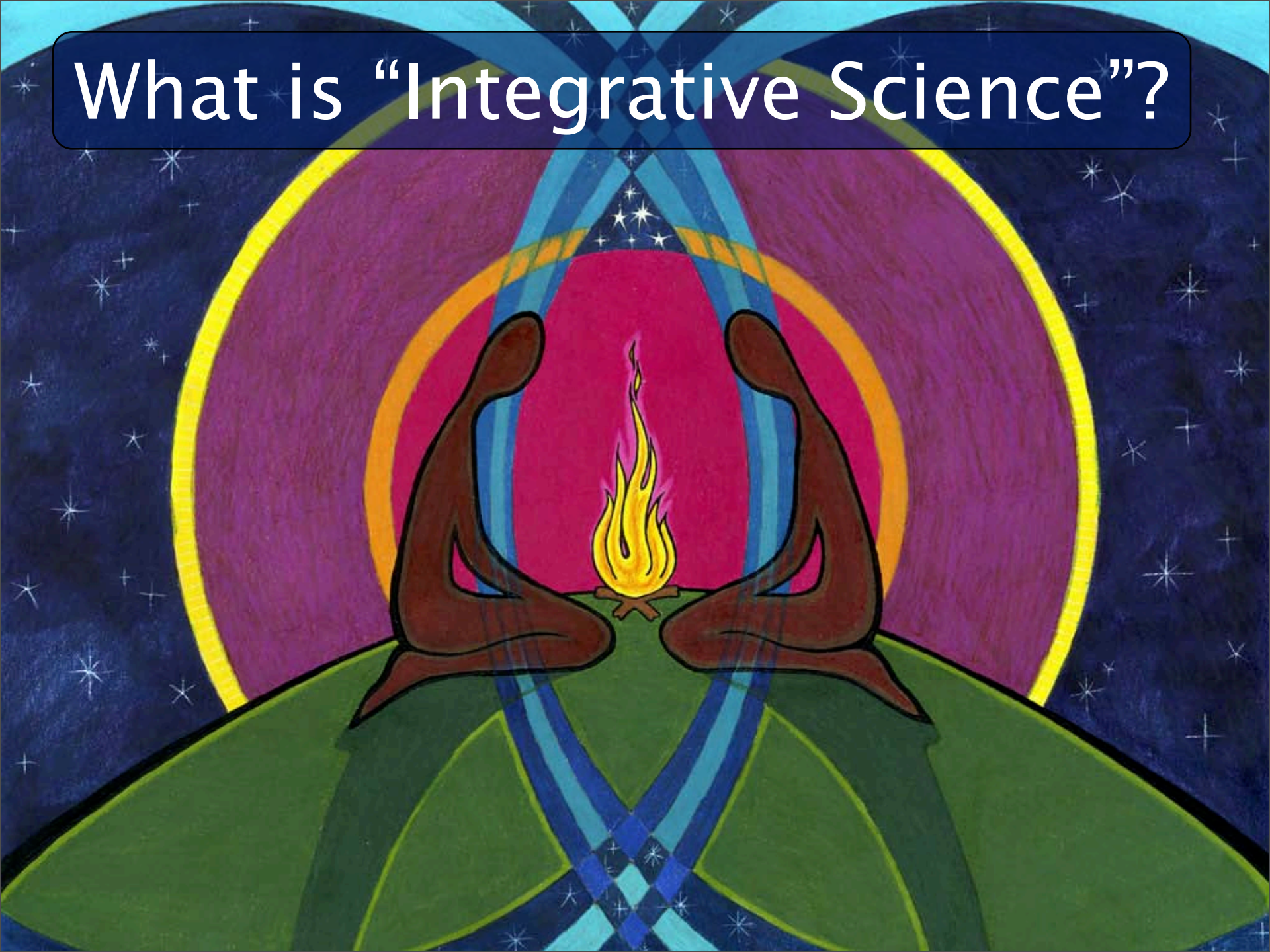
Membertou



A Mi'kmaq First Nation Community

Membertou First Nation

What is “Integrative Science”?



What is “Integrative Science”?



“bringing our stories together”

What is “Integrative Science”?



Indigenous

Western

“bringing our stories together”

What is “Integrative Science”?



Indigenous

Western

“bringing our world views together”

What is “Integrative Science”?

The illustration depicts two stylized brown figures sitting in a circle on a green ground, facing each other around a central yellow and orange campfire. They are framed by a large, multi-layered circular structure with purple, orange, and blue sections, and a yellow dotted border. The background is a dark blue night sky with white stars. The overall theme is the integration of different perspectives.

Indigenous

Western

“bringing our knowledges together”
VIEWS

What is “Integrative Science”?

The illustration depicts two stylized human figures sitting in a circle on a green ground, facing each other around a central campfire with yellow and orange flames. The background is a dark blue night sky filled with white stars. A large, multi-colored circular pattern, resembling a mandala or a stylized sun, surrounds the figures. The pattern consists of concentric rings in shades of purple, yellow, and blue, with a central red area. The overall composition is symmetrical and vibrant.

Indigenous

Western

“bringing our sciences together”
views

What is “Integrative Science”?

SCIENCE

education, research, applications,
youth and community outreach

Indigenous

Western

“bringing our sciences together”

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**Science: “stories of our interactions
with and within nature”**

**Indigenous and Western
scientific knowledges are
based in observations
of the natural world.**

**Science is dynamic,
pattern-based knowledge.**



Major Thrusts

As we reach out across the country to encourage Aboriginal participation in IYA celebrations, we envision two major efforts

(1) collective compilation of night sky stories from across Canada, with respect to one or more particular constellations, and

(2) collective encouragement of dark sky preserves across Canada.

Our third effort will be to ...

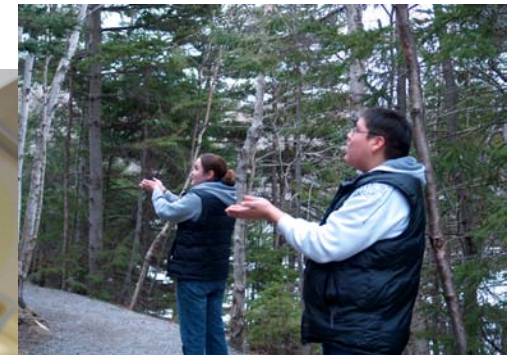
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Highlight educational opportunities and pathways for young Aboriginals interested in science





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Further Information

www.astronomy2009.ca

&

www.astronomie2009.ca

Please visit our poster
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