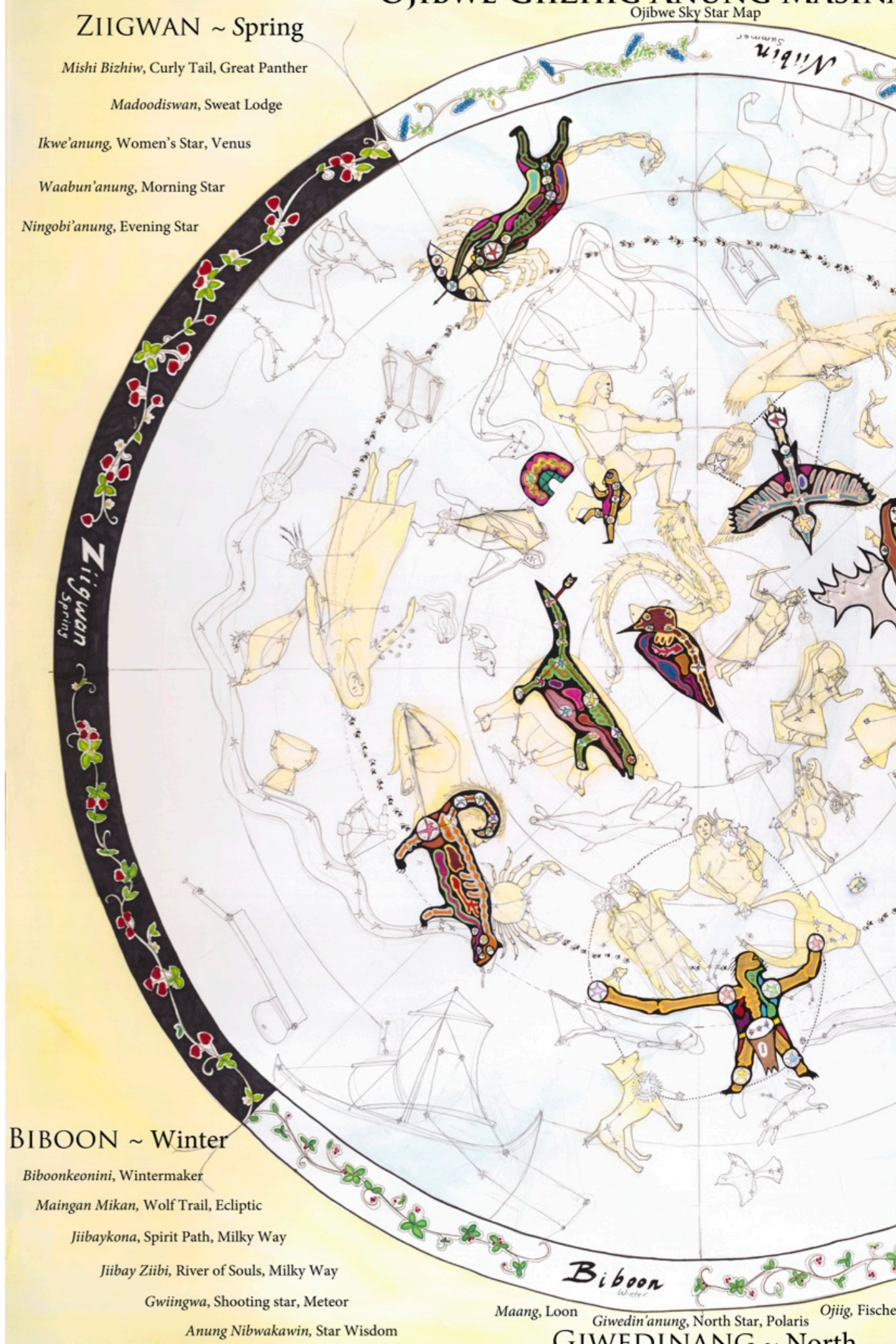


Indigenizing Astronomy

Hilding Neilson
University of Toronto



ZIIGWAN ~ Spring

Mishi Bizhiw, Curly Tail, Great Panther
Madoodiswan, Sweat Lodge
Ikwe'anung, Women's Star, Venus
Waabun'anung, Morning Star
Ningobi'anung, Evening Star

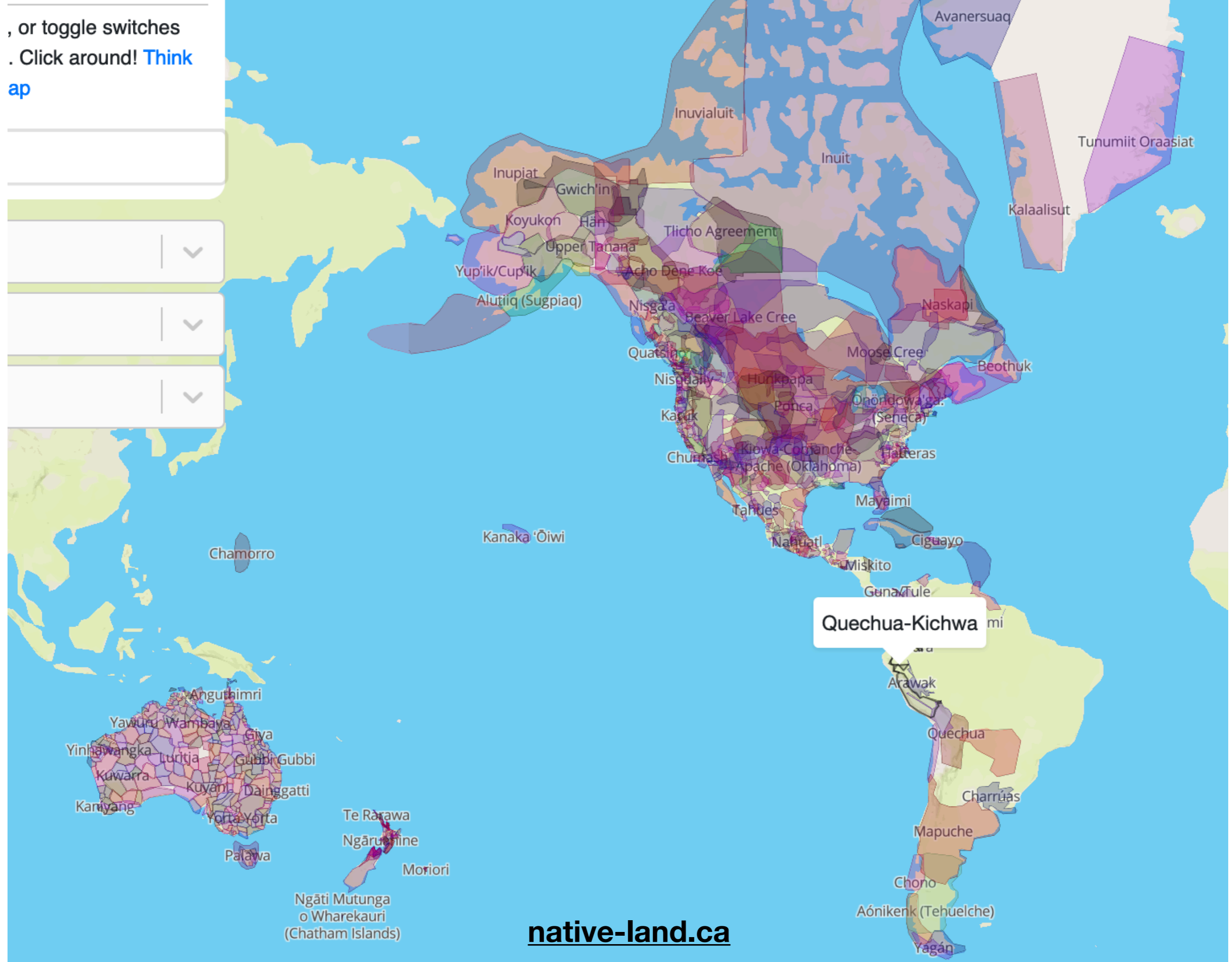
BIBOON ~ Winter

Biboonkeonini, Wintermaker
Maingan Mikan, Wolf Trail, Ecliptic
Jiibaykona, Spirit Path, Milky Way
Jiibay Ziibi, River of Souls, Milky Way
Gwiingwa, Shooting star, Meteor
Anung Nibwakawin, Star Wisdom

Biboon Winter

Maang, Loon Ojiig, Fische
GIWEDINIANG ~ North

, or toggle switches
. Click around! Think
ap



measures Treaties

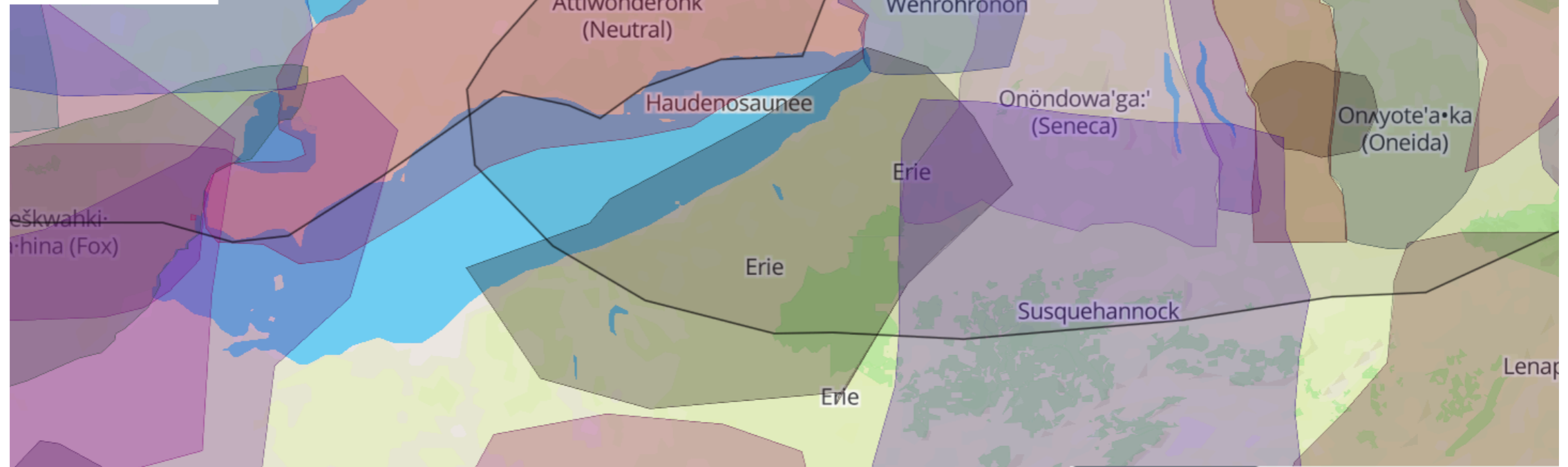
or toggle switches

Click around! [Think](#)

ap

Map navigation controls including three dropdown menus.

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**Indigenizing Astronomy is
part of living and benefiting
from these lands.**

**But, what is Indigenizing
Astronomy?**

Let's
Start





Tataqñ

Polaris

Muin

Andromeda Galaxy

Coma Berenices

Canes Venatici

Vulpecula

Lyra

Draco

Ursa Minor

Ursa Minor

Ursa Major

Leo Minor

Cepheus

Lacerta

Lynx

Camelopardalis

Cassiopeia

Gemini

Beehive

Pegasus



Draco

Ursa
Minor

Polaris

Camelopardalis

Ursa Major

Canes
Venatici

Auriga



Ecliptic / Path of Planets

Andromeda Galaxy

Cygnus X-1

Perseus
Auriga
Gemini
Lynx
Leo Minor
Leo
Ursa Major
Ursa Minor
Camelopardalis
Polaris
Draco
Canes Venatici
Coma Berenices
Lyra
Cygnus
Lacerta
Cepheus
Vulpecula
Sagitta
Boötes
Virgo



Ursa Major

Coma Berenices

Canes Venatici

Camelopardalis

Ursa Minor

Polaris

Draco

Corona

Cassiopeia

Serpens

There are many lessons in this story...

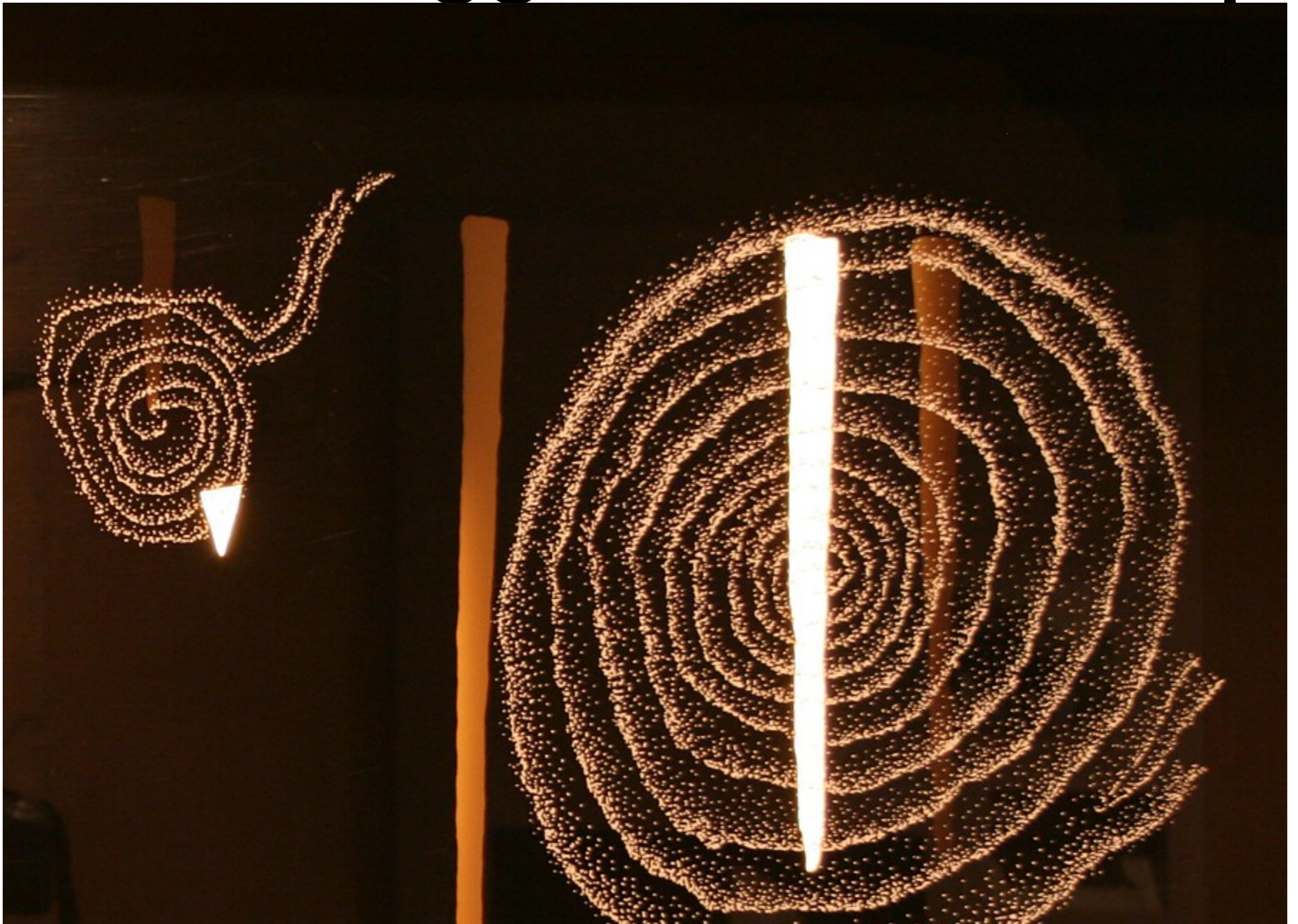
- About behaviour of animals
- Calendar for hunting and events
- Working together
- Seasons
- Circumpolar stars
- Movement of stars

Indigenous knowledge built upon axioms

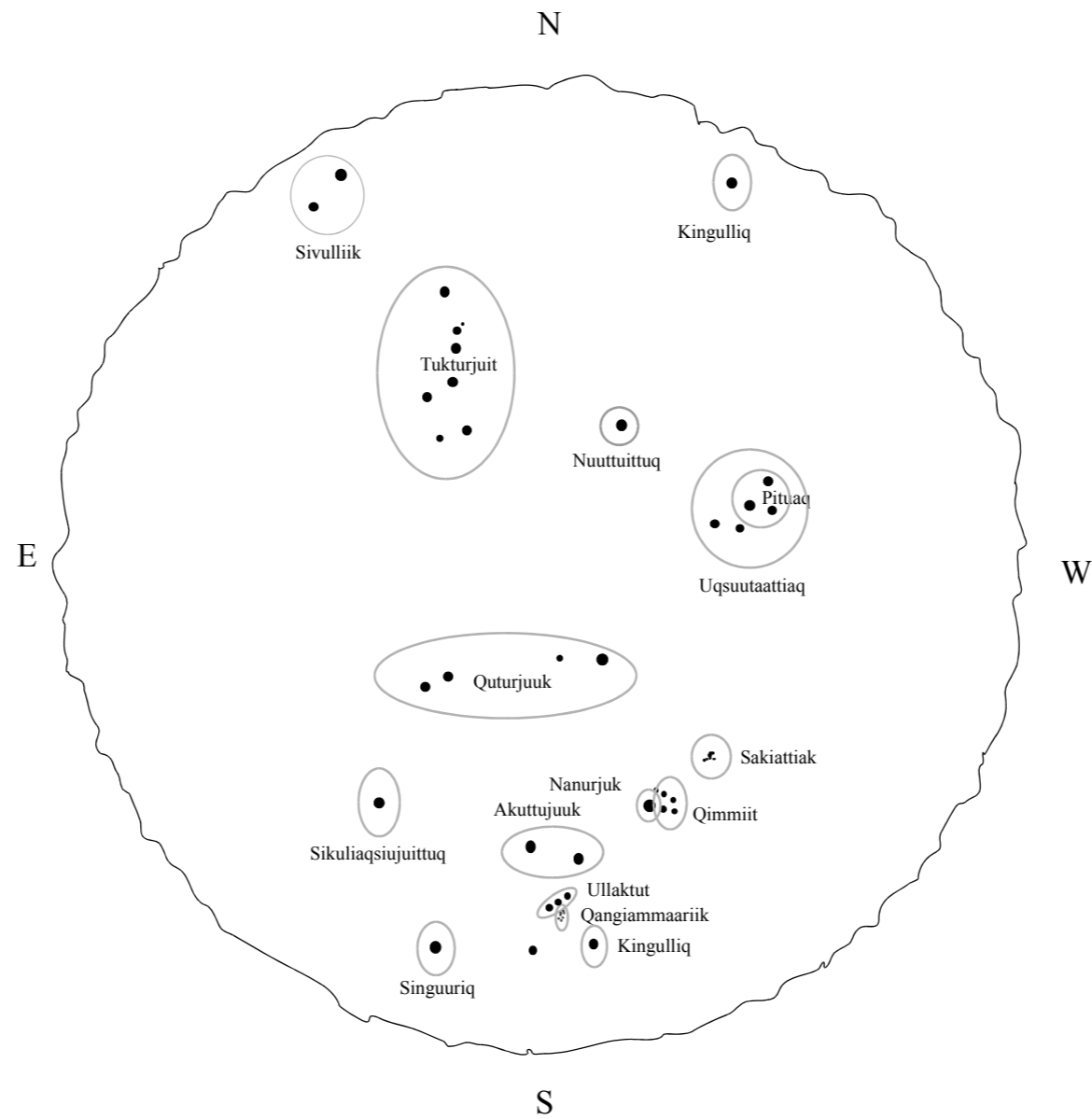
- What's above reflects below
- Knowledge is relational
- Considers multiple variables that interact concurrently
- Knowledge is (w)holistic
- Nature is holy, sacred, unity, familial

**These axioms complement
Western Traditional Science.**

The Sundagger is one example

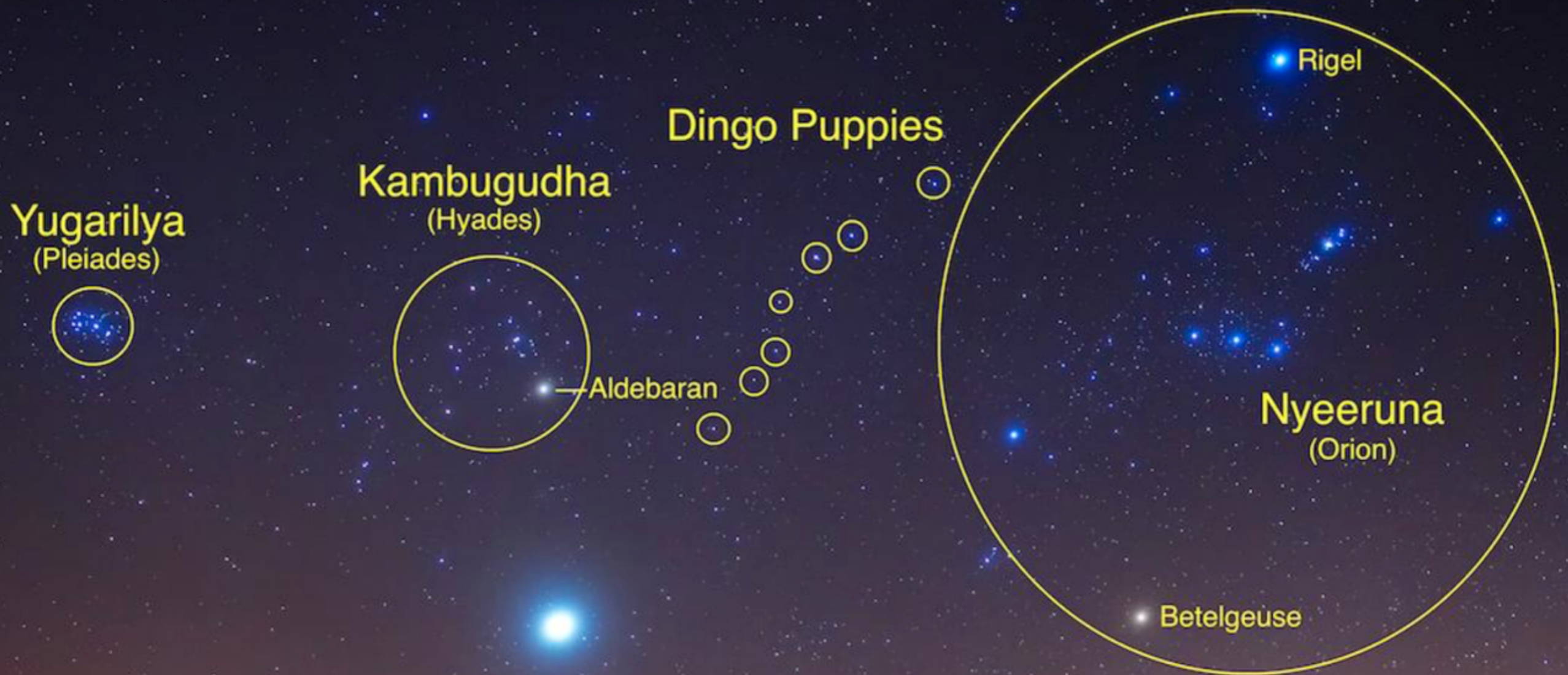


Singuuriq is the flickering star.



Night Sky Above Igloolik (Central Nunavut) at Winter Solstice

Indigenous Australians discovered Betelgeuse is a variable star.

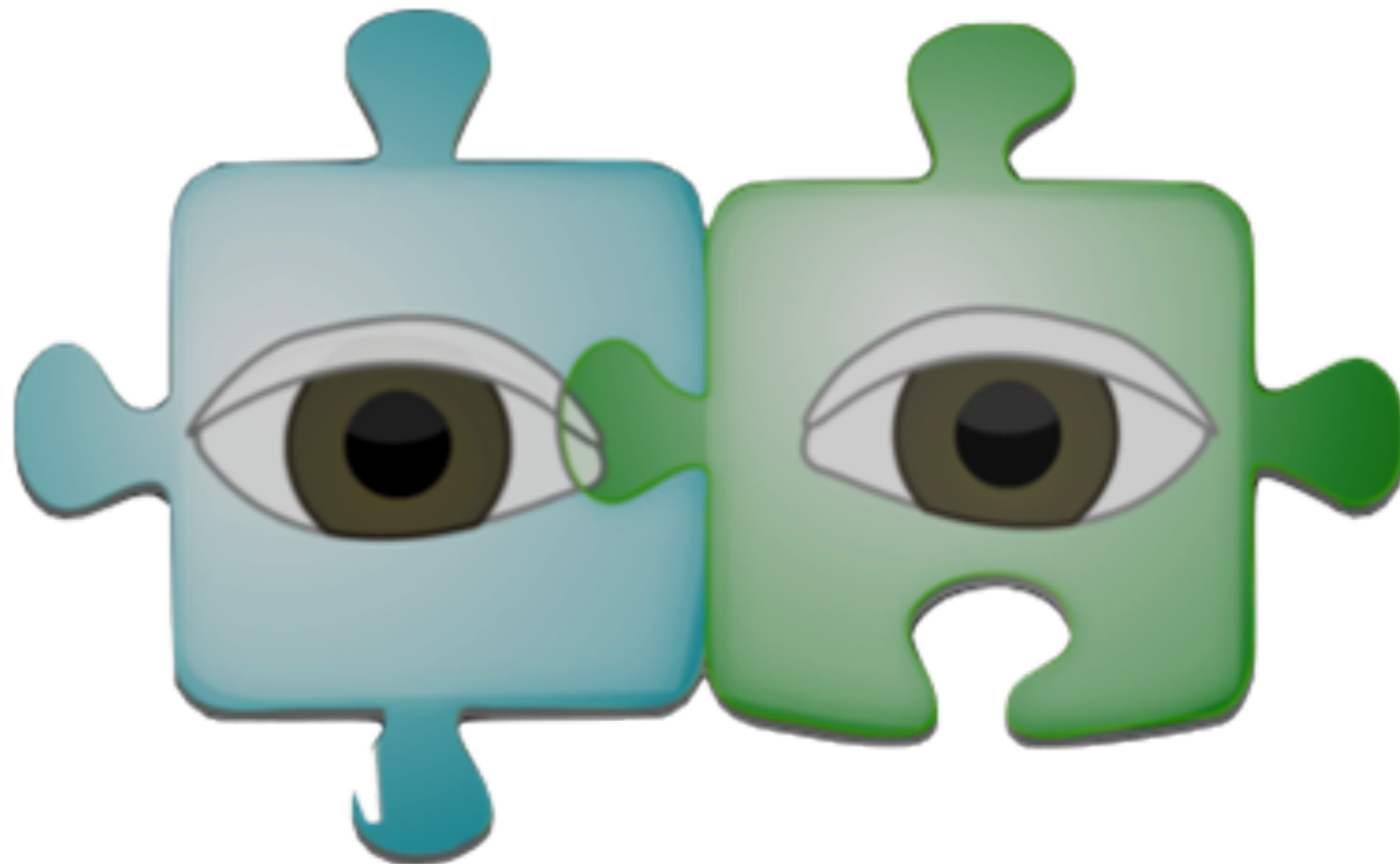


How can we take steps to Indigenize Astronomy

- Land acknowledges are nice, but must come with an intent.
- Invite and support Elders and knowledge keepers to share knowledge
- Listen to Indigenous peoples and speakers
- Appreciate knowledge is codified in stories and relies on different methodologies.

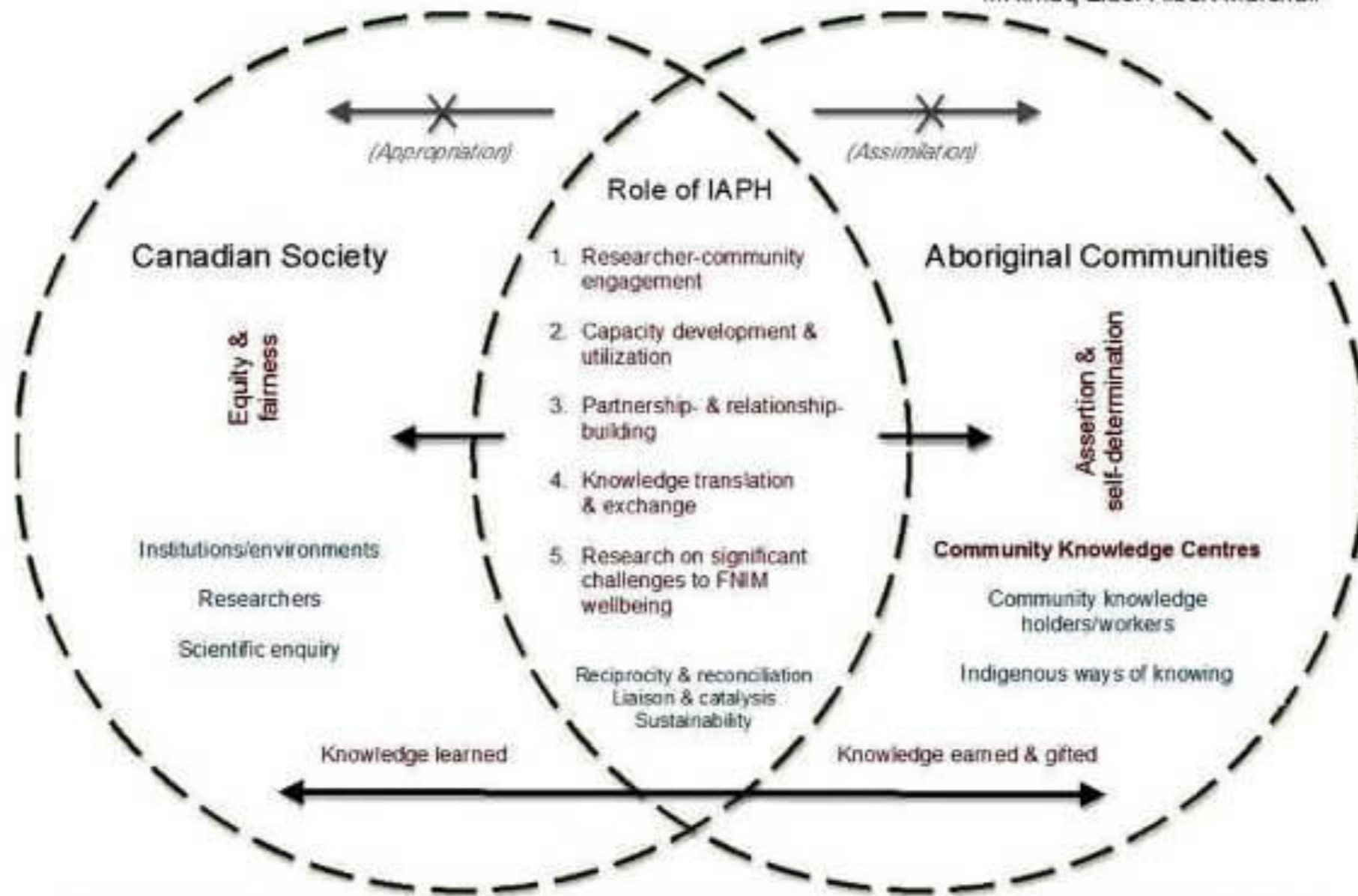
Embracing Indigenous Knowledge will only make us better scientists

- Many models for blended learning including Two-Eyed Seeing from Mi'kmaw communities (Marshall et al. 2012)



Two-eyed Seeing*: A Model for Co-advancement

*Mi'kmaq Elder Albert Marshall



Vision: Healthy & Well First Nations, Inuit & Métis Peoples through Community Knowledge & Indigenous Values

Malcolm King, p. 3 in: *Aboriginal Peoples' Wellness in Canada: Scaling Up the Knowledge ... Cultural Context and Community Aspirations.

*Summary Report from the Roundtable in Ottawa, March 3-4, 2011 (Report prepared - May 19, 2011)

<http://www.ihe.ca/documents/Aboriginal%20Roundtable%20Report.pdf>