NEWS and VIEWS

Fire in the sky: The southern lights in Indigenous oral traditions

By Dr Duane Hamacher - Nura Gili Indigenous Programs, UNSW
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Parts of Australia have been privileged to see dazzling lights in the night sky as the Aurora Australis – known as the southern lights – put on a show earlier this year.

A recent surge in solar activity caused spectacular auroral displays across the world. While common over the polar regions, aurorae are rare over Australia and are typically restricted to far southern regions, such as Tasmania and Victoria.

But recently, aurorae have been visible over the whole southern half of Australia, seen as far north as Uluru and Brisbane.
Different cultures
It’s a phenomenon that has existed since the Earth’s formation and has been witnessed by cultures around the world. These cultures developed their own explanation for the lights in the sky – many of which are strikingly similar.

From a scientific point of view, aurora form when charged particles of solar wind are channelled to the polar regions by Earth’s magnetic field. These particles ionize oxygen and nitrogen molecules in the upper atmosphere, creating light.

Auroral displays can show various colours, from white, to yellow, red, green, and blue. They can appear as a nebulous glowing arcs or curtains waving across the sky.

Aurorae are also reported to make strange sounds on rare occasions. Witnesses describe it as a crackling sound, like rustling grass or radio static.

In the Arctic, the Inuit say the noise is made by spirits playing a game or trying to communicate with the living.

In 1851, Aboriginal people near Hobart said an aurora made noise like “people snapping their fingers”. The cause of this noise is unknown.

Aurorae are significant in Australian Indigenous astronomical traditions. Aboriginal people associate aurorae with fire, death, blood, and omens, sharing many similarities with Native American communities. They are quite different from Inuit traditions of the Aurora Borealis, which are more festive.

Fire in the sky
Aboriginal people commonly saw aurorae as fires in the cosmos. To the Gunditjmara of western Victoria, they’re Puae buae (“ashes”). To the Gunai of eastern Victoria, they’re bushfires in the spirit world and an omen of a coming catastrophe.

The Dieri and Ngarrindjeri of South Australia see aurora as fires created by sky spirits.

As far north as southwestern Queensland, Aboriginal people saw the phenomenon as “feast fires” of the Oola Pikka —— ghostly beings who spoke to Elders through the aurora.
The Maori of Aotearoa/New Zealand saw aurorae (Tahunui-a-rangi) as the campfires of ancestors reflected in the sky. These ancestors sailed southward in their canoes and settled on a land of ice in the far south.

The southern lights let people know they will one day return. This is similar to an Algonquin story from North America.

A warning to follow sacred law
Mungan Ngour, a powerful sky ancestor in Gunai traditions, set rules for male initiation and put his son, Tundun, in charge of the ceremonies. When people leaked secret information about these ceremonies, Mungan cast down a great fire to destroy the Earth. The people saw this as an aurora.

Near Uluru, a group of hunters broke Pitjantjatjara law by killing and cooking a sacred emu. They saw
smoke rise to the south, towards the land of Tjura. This was the aurora, viewed as poisonous flames that signalled coming punishment.

The Dieri also believe an aurora is a warning that someone is being punished for breaking traditional laws, which causes great fear. The breaking of traditional laws would result in an armed party coming to kill the lawbreakers when they least expect it.

In this context, fear of an aurora was utilised to control behaviour and social standards.

**Blood in the cosmos**
The red hue of some aurorae is commonly associated with blood and death.

To Aboriginal communities across New South Wales, Victoria, and South Australia, auroral displays represented blood that was shed by warriors fighting a great battle in the sky, or by spirits of the dead rising to the heavens.

Celestial events that appear red are often linked to blood, including meteors and eclipses.

A total lunar eclipse turns the moon red (sometimes called a blood-moon), which was seen by some communities as the spirit of a dead man rising from his grave.

Rare astronomical events were viewed as bad omens by cultures around the world. Now imagine if two of these events overlap!

In 1859, Aboriginal people in South Australia witnessed an auroral display and a total lunar eclipse. This caused great fear and anxiety, signalling the arrival of dangerous spirit beings.
There was nearly a repeat of this astronomical double-act when a lunar eclipse was visible across Australia on Saturday April 4, 2015.

**Remote Indigenous outstation rejects Federal Government policy and opens own school**

**Murumpu Wangka! Kukatja Hand Talk**
[https://vimeo.com/132209310](https://vimeo.com/132209310)

**Aboriginal Language Map**
[http://www.abc.net.au/indigenous/map/](http://www.abc.net.au/indigenous/map/)

**Develop and apply knowledge of science in Aboriginal and Torres Strait Islander contexts**
[https://www.youtube.com/watch?v=sUe-Lc0GPGE&feature=youtu.be](https://www.youtube.com/watch?v=sUe-Lc0GPGE&feature=youtu.be)

**Growing up in Halls Creek won't stop you becoming a doctor**

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**INDIGENOUS ASTRONOMY**

**Aboriginal astronomy & the clash of cultures**
Dr Ragbir Bhathal from the University of Western Sydney will be giving a talk on aboriginal astronomy & the clash of cultures at the Sydney Science Festival on 18 August 2015.

The talk will discuss some aspects of Aboriginal social-cultural astronomy and how it clashed with the culture and politics of the dominant culture in Australia.
It had significant consequences for Australian society which are still ongoing. The author does not see any resolution of the differences between these cultural clashes.

The talk will be held on Tuesday 18 August 2015 from 12.30-1.30 pm at the University of Sydney, Business School CBD Campus, 133 Castlereagh Street in Sydney. The event is free of charge. All are welcome.

The Indigenous Astronomy Group @ UNSW
The Indigenous Astronomy Group at the University of New South Wales continues to grow, publish, and promote Indigenous Astronomy.

The group is prominent on social media, including Facebook and Twitter, and recently launched a YouTube channel, as well as maintaining our Blog.

Some members of the UNSW Indigenous Astronomy Group (L to R): Bob Fuller, Melissa Razuki, Dr Duane Hamacher, Trevor Leaman, and Michelle Gantevoort.

NEWS

RIP John Morieson
We are saddened by the passing of Aboriginal astronomy pioneer, researcher, and educator John Morieson (1938-2015). John earned an MA at the University of Melbourne in 1996 with a thesis re-analysing the astronomy of the Boorong people using the records of W.E. Stanbridge. He was also the first to suggest the Wurdi Youang stone arrangement contained astronomical alignments, as well as the first to incorporate Aboriginal artworks into the Stellarium software package.

Congrats to Robert “Bob” Fuller
Bob was accepted into the PhD program at UNSW with a fully funded APA scholarship. Bob will study Aboriginal astronomy and songlines along coastal southeastern Australia. He previously completed a Masters degree at Macquarie University studying the astronomy of the Kamilaroi and Euahlayi people of northern New South Wales. He is supervised by Dr Duane Hamacher and Prof Stephen Muecke.
Eddie “Koiki” Mabo Star Dedication

Our group was happy to be involved in the dedication of a star in the Sydney Observatory Southern Sky Catalogue to Eddie Koiki Mabo on 3 June 2015 (Mabo Day). Eddie Mabo was critical in the fight for Native Title, overturning the fictional idea of Terra Nullius. “Koiki” is a blue, B-class star in the Southern Cross (Crux). The stars is SSSC 803504, RA: 12:12:21.9, DEC: -62:57:03.0, Vmag: 5.97.

RESEARCH


The group is busy preparing several papers for publication later in 2015. Details will come as they are published.

IN THE MEDIA

- Indigenous Astronomy. *ABC RN “The Drawing Room“* (Jun ’15)
- Australian Aboriginal Astronomy. *ABC New England* (Jun ‘15)
- Aboriginal legends reveal ancient secrets to science. *BBC News* (May ’15)
- Garnkiny to Ganyu: artists who capture the night. *Art Exhibition* (May ‘15)
- Women look to the skies for answers. *Sydney Morning Herald* (Apr ’15)
- Meteorite impact on Indigenous traditions. *2SER 107.3 FM* (Mar ’15)

RESOURCES

Recent book

Indigenous children, like all children, deserve a future they choose for themselves. This book aims to empower teachers to help halt the cycle of disadvantage for Aboriginal and Torres Strait Islander students and make a real difference to their relationships, learning outcomes and opportunities in the short and long term...Based on their many years of experience in teaching and research, the authors provide approaches that have been proven to be effective. There are strategies for developing sensitivity to a student's cultural background, creating a tone in the classroom conducive to learning, building strong teacher-student relationships and effectively managing student behaviour. The authors show how to bridge the demands of the curriculum with the learning Indigenous students bring with them to the classroom and how to work with the learning styles of Aboriginal and Torres Strait Islander students. There is a focus on the best approaches for assessment and an exploration of the particular challenges for teachers of students in remote locations...Both practical and inspiring, this is an essential reference for all teachers working with Indigenous students, whether they be in the city or rural areas, in a class of twenty-five or just one student...*Teaching Indigenous Students* should be essential reading for all educators. This book will challenge the mind and stir the spirit of the practitioner and will help forge a new future for the teaching of Aboriginal and Torres Strait Islander students. A seminal piece of work.’ - Professor Mark Rose, Executive Director of Indigenous Strategy and Education, La Trobe University

Recent thesis
Abstract This study explores the effectiveness of the Montessori Method in teaching zoology to Year 8–9 students in an Indigenous independent high school at Koora in Queensland and develops a theory that explains the impact of the approach on their learning about vertebrates. Specifically, it examines the process of merging local Indigenous knowledge into the Montessori zoology curriculum (non-Indigenous) to produce localised, Indigenised and contextualised teaching/learning materials. It investigates the Montessori classroom practices experienced by the students in their social milieu as they build on and develop their understandings of zoology concepts.

Drawing on teacher action research, the study identifies the processes by which Indigenous knowledges and Montessori Methods can be merged to produce contextualised teaching and learning. It draws on lesson observations, on Year 8–9 students, Elders and myself. Twelve Year 8–9 Indigenous students who experienced the teaching of integrated local and Linnaean classifications of animals were interviewed and administered pre- and post-evaluations. From this data, the study explicates their understandings of how such integration has built on their Indigenous knowledges of their culture and the Linnaean taxonomy and considers the implications of different students’ experiences of learning through this integrated approach. Eighty-three lessons were designed and trialled in the study and included Elders’ narratives on local fauna and Montessori curriculum material. Classroom observations focused on the effect of the teaching on students’ pride in heritage and knowledge of culture and the Linnaean taxonomy.

Action research provides the means for the merging of Indigenous knowledges and Montessori Methods to study the practices and experiences of this process. It shows, through a reflective cycle of planning, teaching, observing and reflecting, the teaching and learning processes that work and do not work to engage students in their learning. Action research allows a richer exploration of the reported practices and experiences of science lessons with particular regard to linking the theoretical and practical concerns of this study via two frameworks: Indigenist research and Montessori Method.

Results reveal that the conflation of Indigenous and non-Indigenous knowledge, with an emphasis on contextualisation, strengthened both the Indigenous students’ identity and the status of local Indigenous knowledge in the science classroom. Evidence also indicates Indigenous students developed deeper understandings of the Linnaean taxonomy.

This study’s significance is twofold. It lies in the critical importance of the issue it addresses – the merging of Indigenous knowledge of vertebrates with the Montessori Method to support students – and the use of action research to enable strong understandings of the significance of this process. Although the study cannot claim generalisability across other populations of Indigenous learners, teachers, schools and Elders because of the small select sample drawn upon, by highlighting their knowledges, practices and experiences it draws attention to a different perspective on science teaching and learning. In this framing, science learning as a social and community process is contingent on access to the discourses of science learning and the practices that support that learning.

International Journal of Multicultural Education
International Journal of Multicultural Education Vol 17, No 2 (2015): Open Theme Issue Table of Contents
http://ijme-journal.org/index.php/ijme/issue/view/34

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Recent paper

CONFERENCES
Second Convention on Perseverance and Academic Achievement for First Peoples
Centre des Premieres Nations Nikanite
Universite du Quebec a Chicoutimi
14-16 October 2015
http://colloques.uqac.ca/prscpp/accueil/
Building on the success of its first Convention on Perseverance and Academic Achievement for First Peoples, the Centre Nikanite of UQAC, supported by the MELS, has decided to relive the experience! The first edition helped to draw up an overview of development practices in the Aboriginal school world in Quebec and in the periphery that may contribute to the perseverance and academic success among First Peoples. The view that emerged was nothing less than an eloquent testimony of equally relevant support measures, research, and support programs. Much of what was presented at the convention is echoed in the first issue of the Journal of Perseverance and Academic Achievement for First Peoples.

In response to the needs expressed by participants in the first edition of the conference, the Scientific Committee wishes to define a little more the scope to explore and further deepen the problems experienced in the field, by exploring initiatives, research, and practices developed concretely in schools. This is what evokes the theme of the second edition of the convention: What is happening in schools: teaching practices, support practices, collaborative practices.

(The website and the conference are mostly in French.)

CALENDAR OF EVENTS
This is mostly a summary of upcoming conferences. More details may have been given in this or previous bulletins as shown. A web-based contact is usually included. Inclusion of conferences in this list should not to be read as an endorsement of the conference.

2015
September


October
1-4 Oct: Asia-Pacific STS Network biennial conference, Kaohsiung, Taiwan (http://apstsn.tw-sts.org/) (April15)

14-16 October: Second Convention on Perseverance and Academic Achievement for First Peoples, Centre des Premieres Nations Nikanite, Universite du Quebec a Chicoutimi (http://colloques.uqac.ca/prscpp/accueil/)

2016

April
14-17 April: National Association for Research in Science Teaching (NARST) conference, Renaissance Baltimore Harborplace Hotel, Baltimore, MD, USA

June-July
Australasian Science Education Research Association (ASERA) conference, Canberra (host: University of Canberra)

2017

Six Nations Polytechnic and TAP Resources are pleased to announce their successful partnership bid to host the 2017 World Indigenous Peoples’ Conference on Education (WIPCE 2017) in Toronto (no dates yet). http://www.wipce2017.com/