

The background of the slide is a stylized illustration of a sunset or sunrise. The sky is filled with vibrant, layered clouds in shades of orange, red, and yellow. Below the sky, there are several dark, silhouetted clouds of varying shapes and sizes. The bottom of the image shows a dark, textured surface, likely representing water, with a grid-like pattern.

The First Astronomers

How Indigenous Elders Read the Stars

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Everything on the land
is reflected in the sky.



We are a people of culture.
We are also a people of science.



Your ability to thrive depends on
your ability to read the stars.

How is science embedded
in Indigenous Knowledge?





And how is this knowledge passed down?

Dark Constellations

A night sky photograph showing the Milky Way galaxy arching across the frame. The foreground features dark, silhouetted mountain peaks. The text "Dark Constellations" is overlaid in the center.

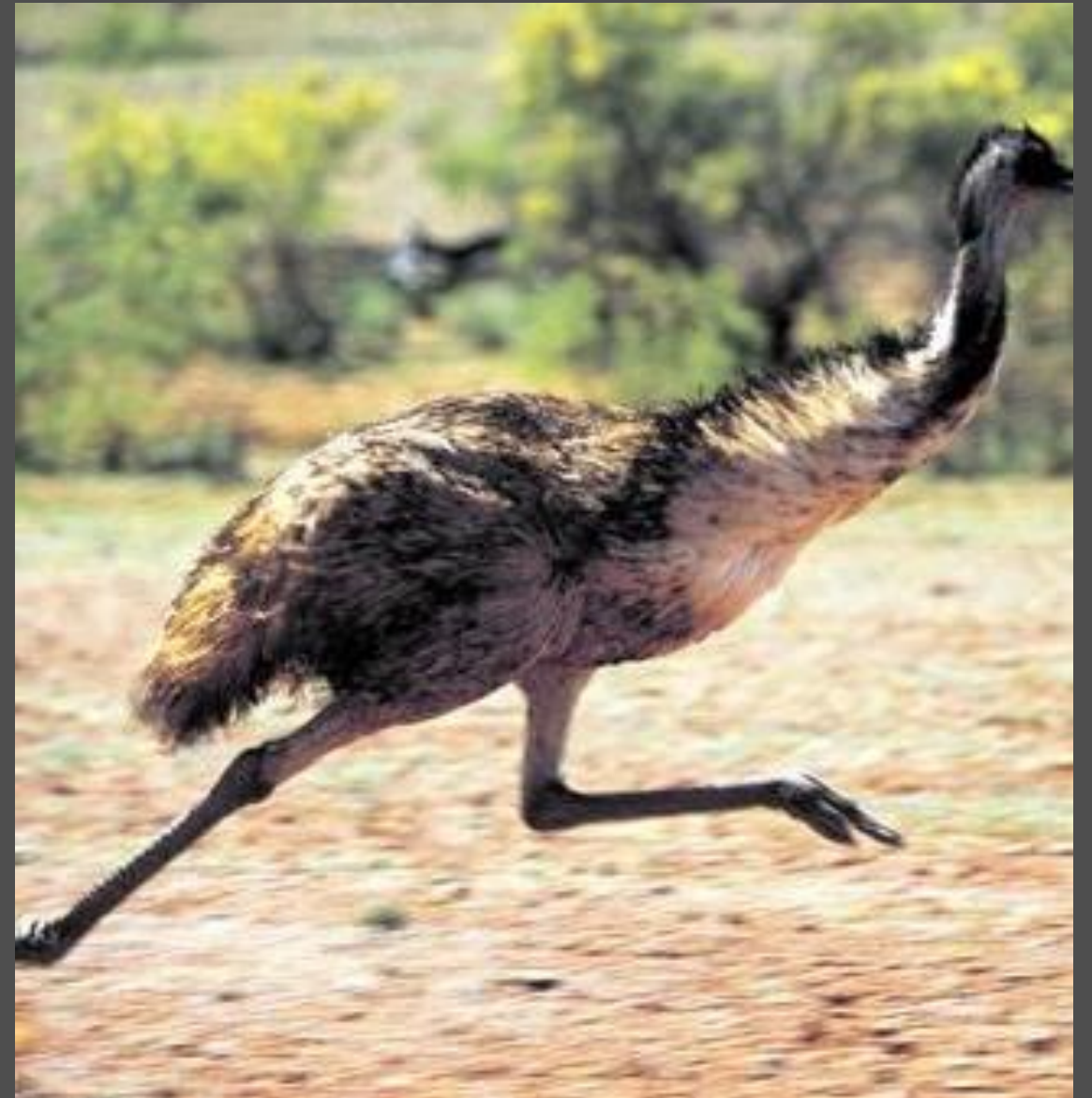


Coalsack

The Celestial Emu



April-May

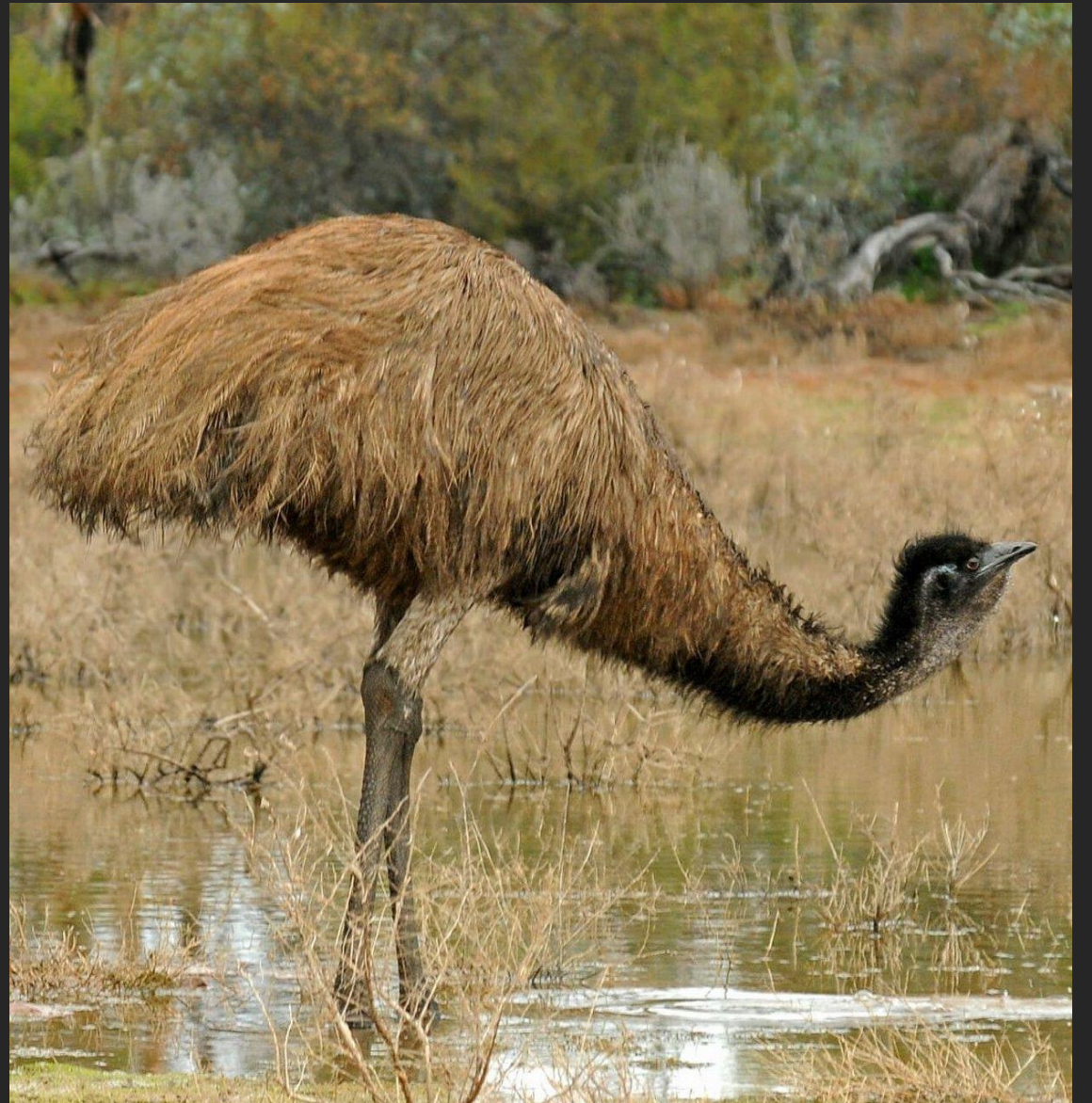
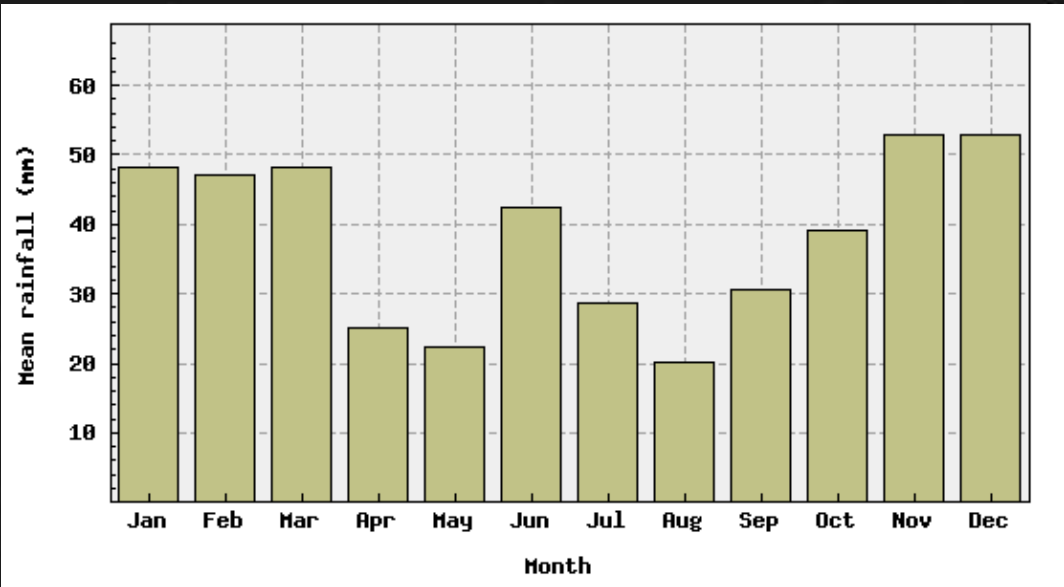


June-July



August-September





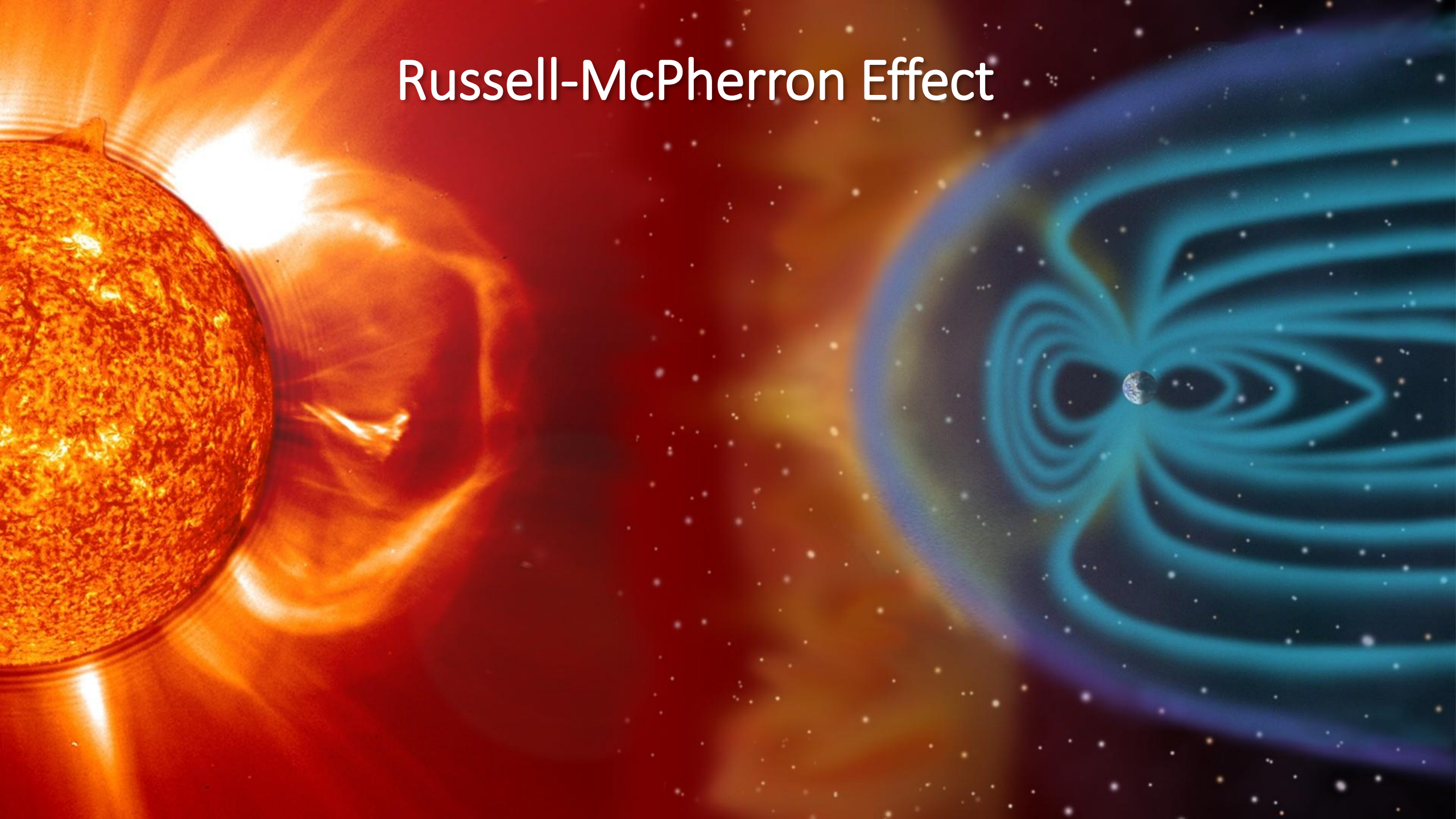


Sunspots and Aurorae

Mudong Cycle (10-11 years)



Russell-McPherron Effect





Guovssahas

“The Light You Can Hear”





Eclipses

On very rare occasions, Bahloo and Yhi found a way to get together in the spirit of Dthoorri-Odthoo and join as one.

For a short moment in time, the two join in secret, which can be seen as a solar eclipse.



During eclipses, Euahlayi say that 'bad spirits come among us.'

So great is the power of forbidden love that anybody seen watching an eclipse will be blinded by the power of the light of their union.



Merlpal Maru Pathanu

The pearl shell headdress (Mayngu Dhoeri) was made for the moon dance (also known as merlpal kulkan patan which translates to 'blood covering the moon'), traditionally performed during a lunar eclipse, a ceremony peculiar to Boigu Island.

The possibility of warfare and bloodshed on neighbouring islands is predicted during this performance with the sun's passing in front of the moon.

Island names are chanted sequentially during the performance and the one being sung at the second the moon emerges from behind the moon is believed to be the island at war.

Sipau Audi Gibuma (b. 1942) is a Torres Strait Islander who learnt the craft of woodcarving and pearl shell working from his grandfather. Gibuma is well known for his work as a 'Mayngu dhoeri' or headdress maker.

A vibrant, multi-colored nebula or starburst in space, with the text "Variable Stars" centered over it. The nebula features a bright white and yellow core, surrounded by swirling clouds of orange, red, and purple. The background is a deep blue space filled with numerous small, distant stars.

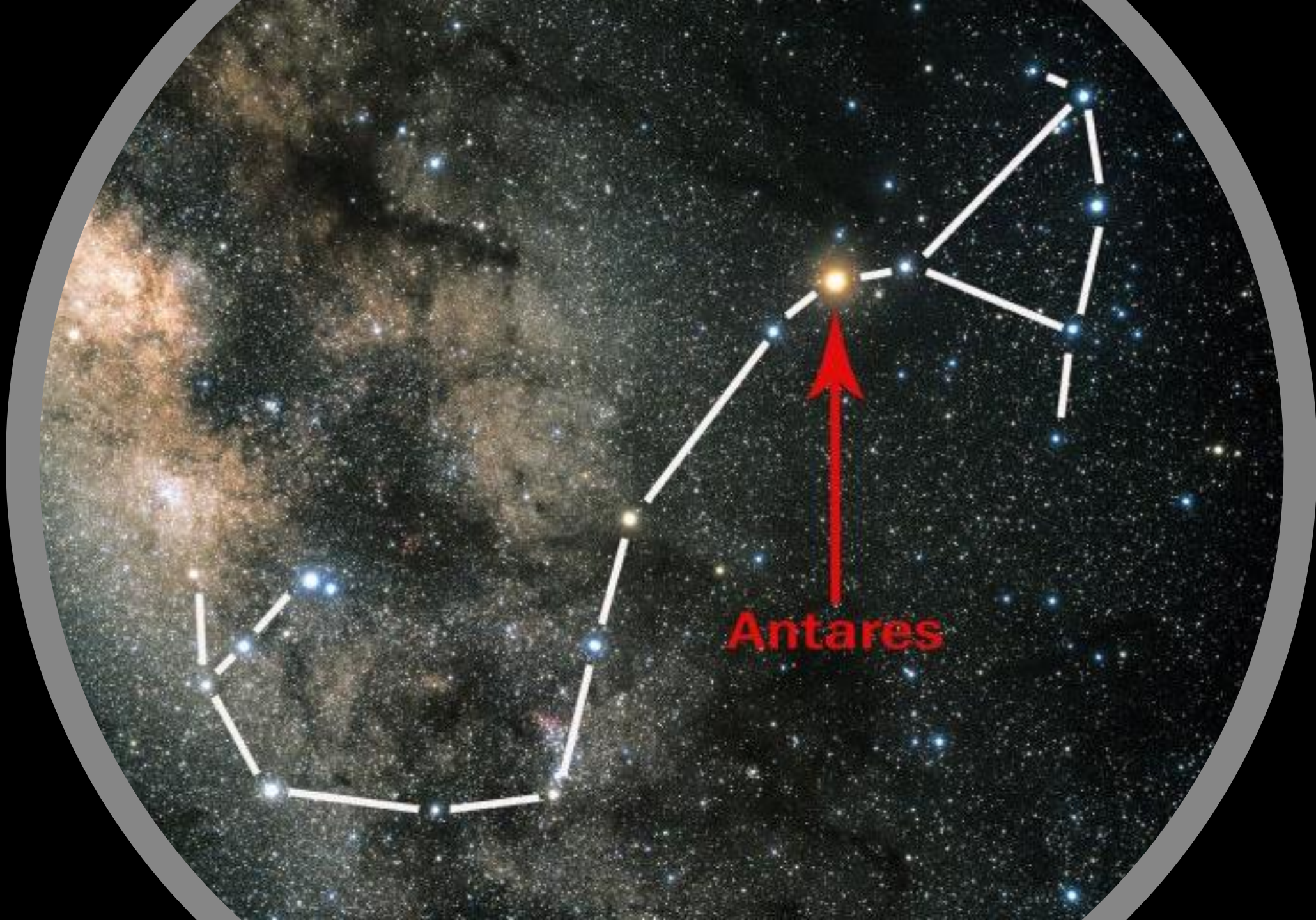
Variable Stars

Waiyungari

Cedric
Varcoe







Antares

Yugarilya
(Pleiades)



Kambugudha
(Hyades)



— Aldebaran

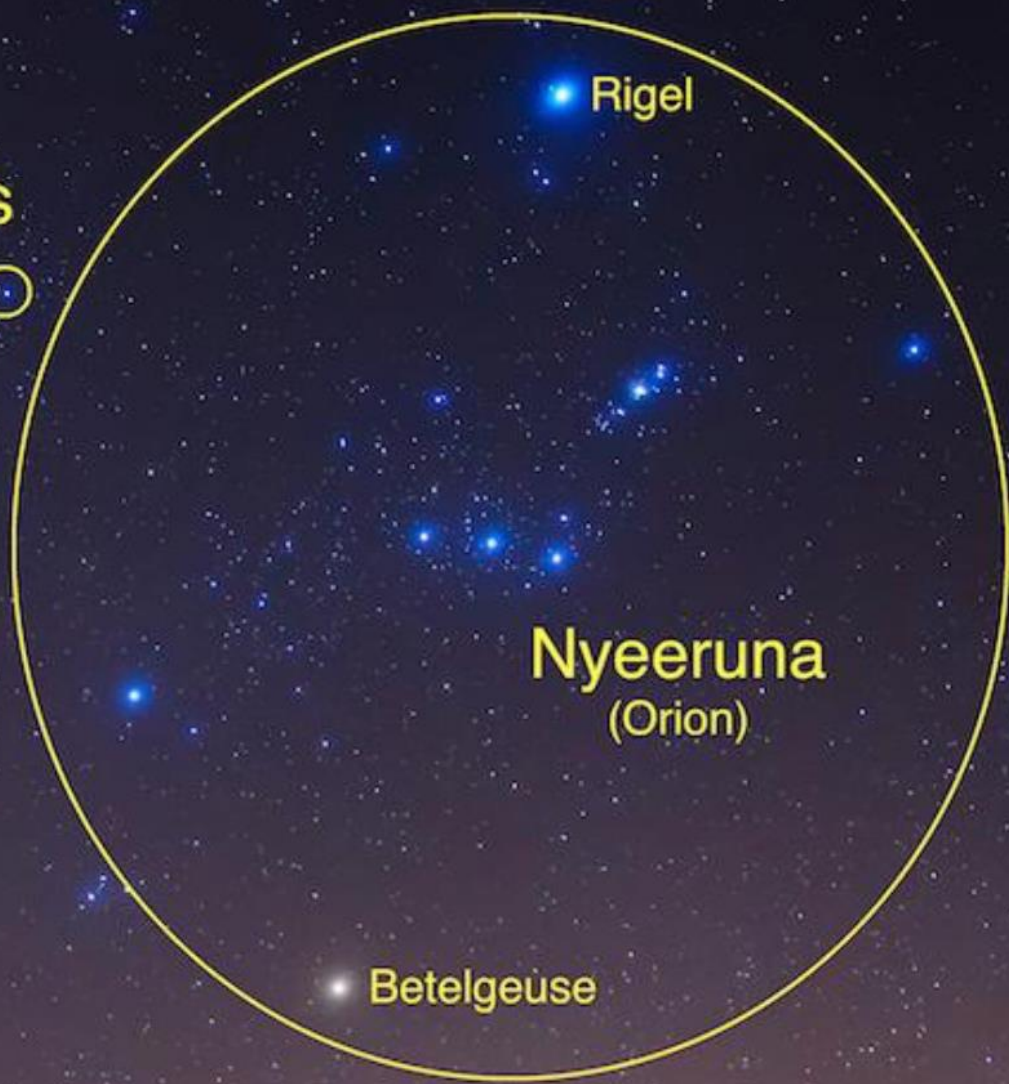
Dingo puppies



Rigel

Nyeeruna
(Orion)

Betelgeuse

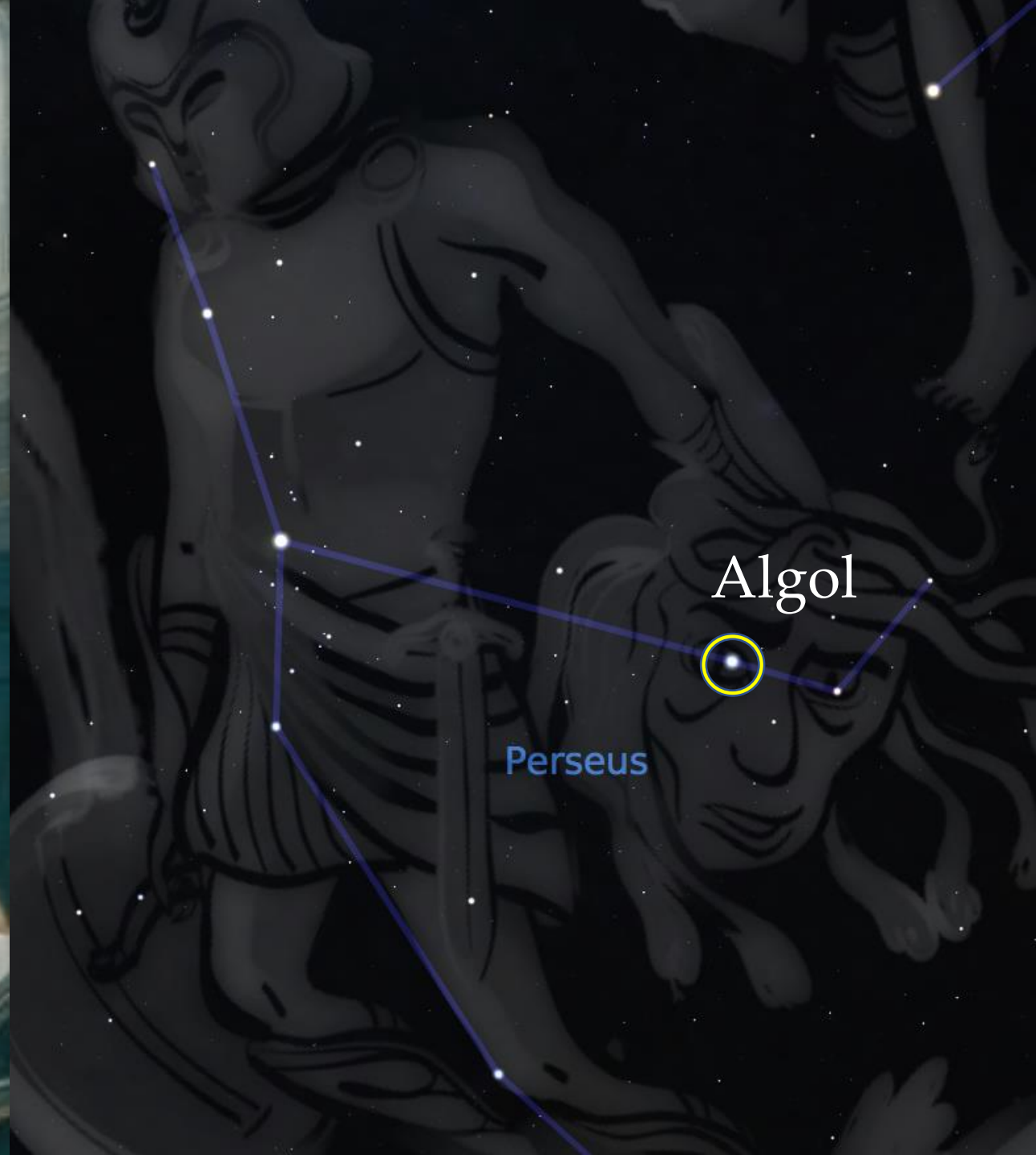
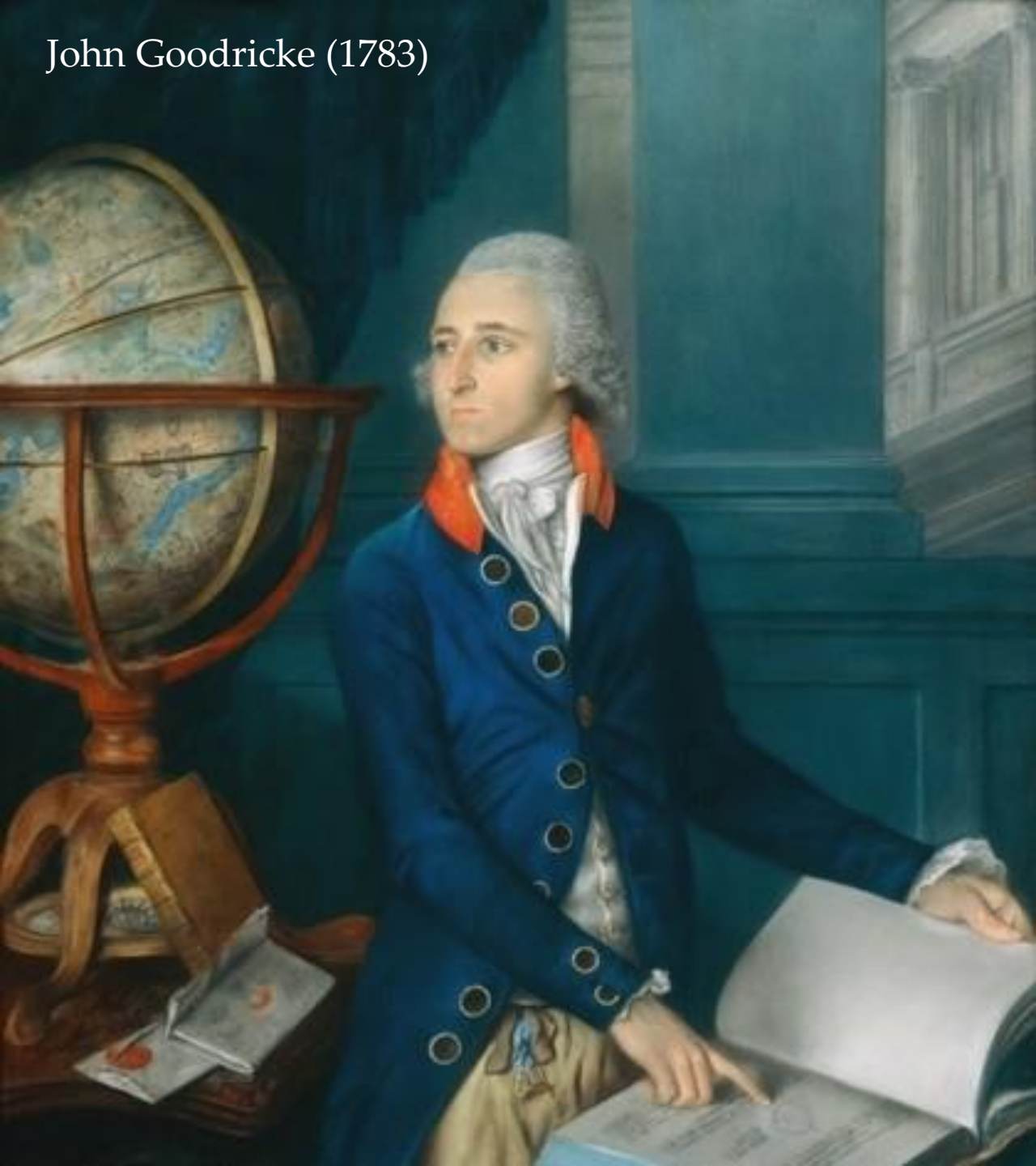


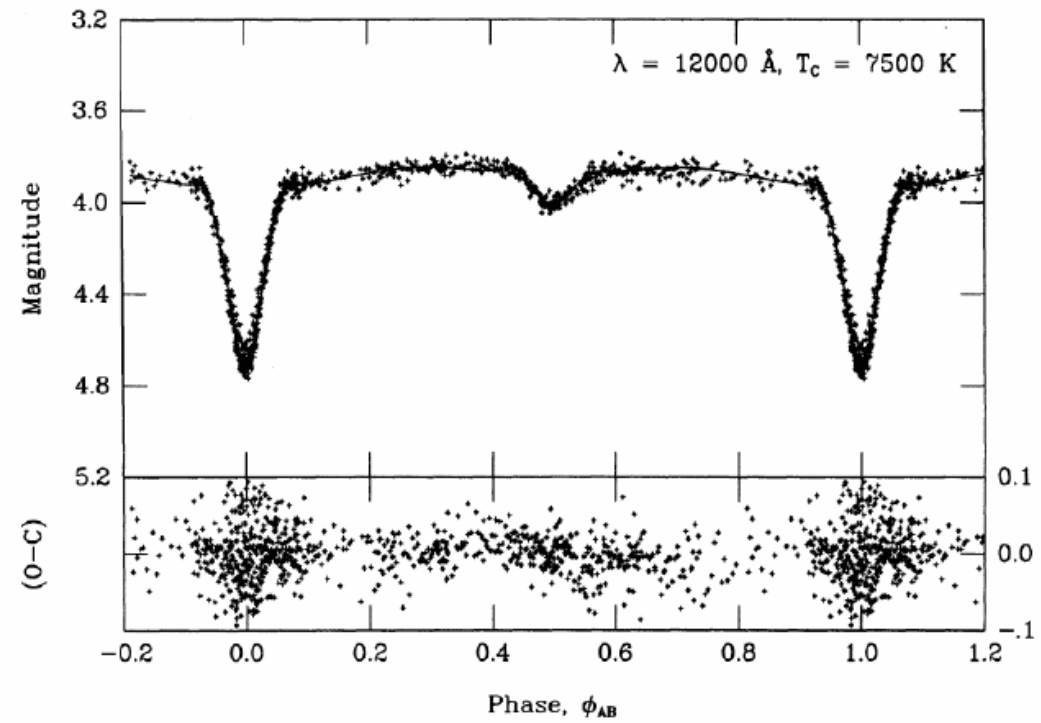
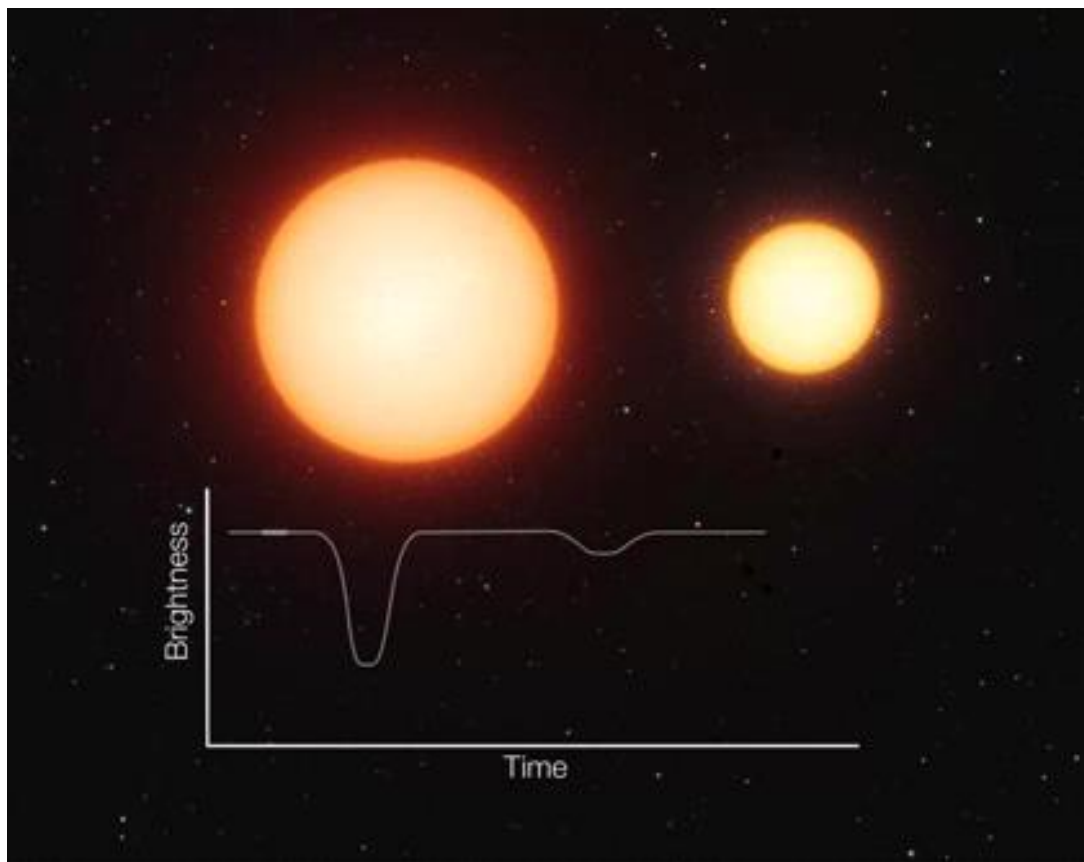


Jan 2019

Dec 2019

John Goodricke (1783)





$P = 2.867 \text{ days}$

Handwritten Arabic text in a cursive script, likely a manuscript. The text is arranged in several lines, with some characters appearing to be stylized or possibly representing a specific dialect or historical form of Arabic. A small square box containing a single character is visible on the left side of the page.

ح

Cairo
86637



1244-1163 BC



NCP

Polaris

Ursa Minor

Ursa Major

Star Maps

1h

12h

+40

+50

+60

+70

+80

+90

+80

+70

+60

+50

+40

0h

13h

23h

14h

22h

15h

21h

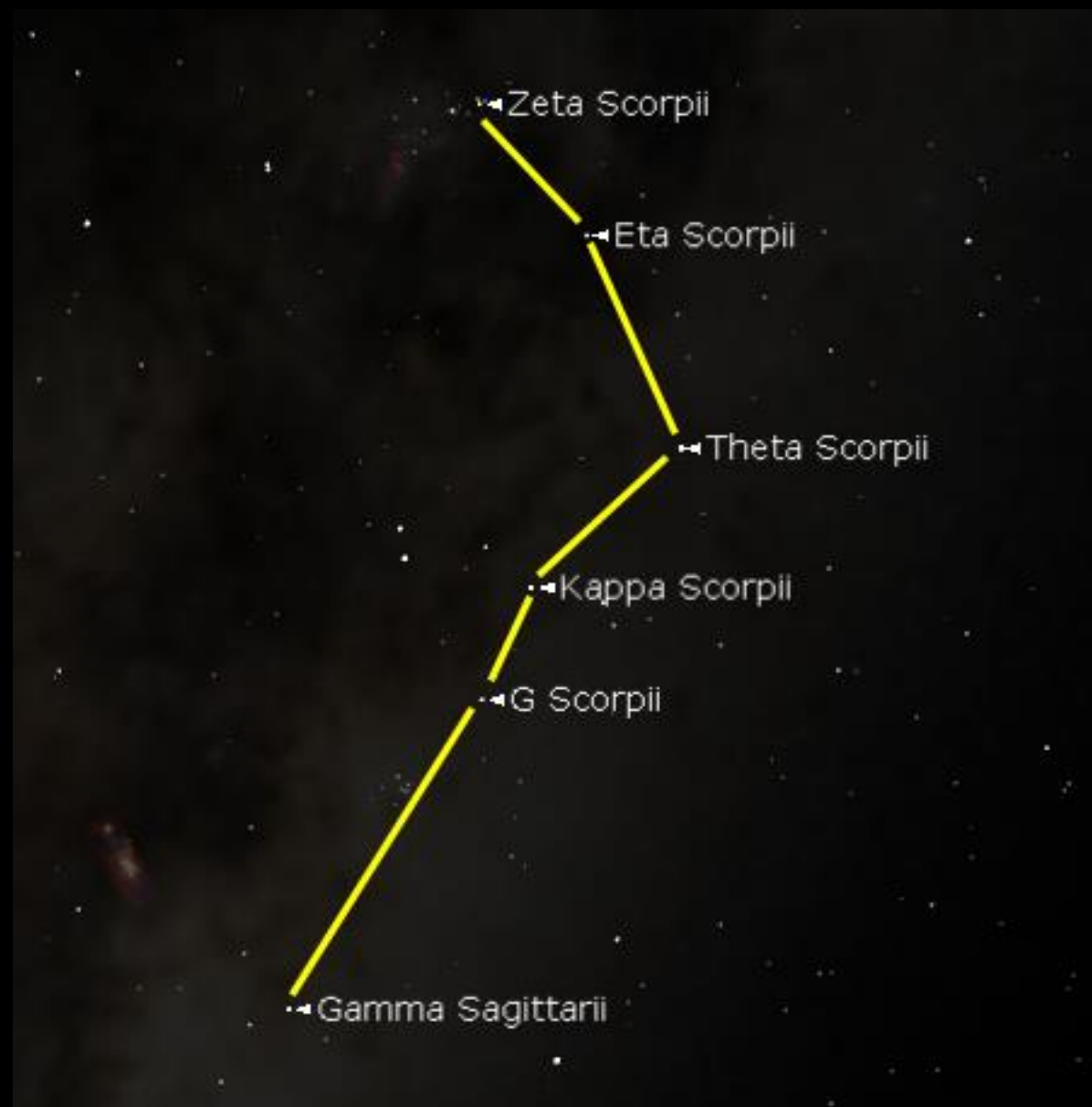
16h

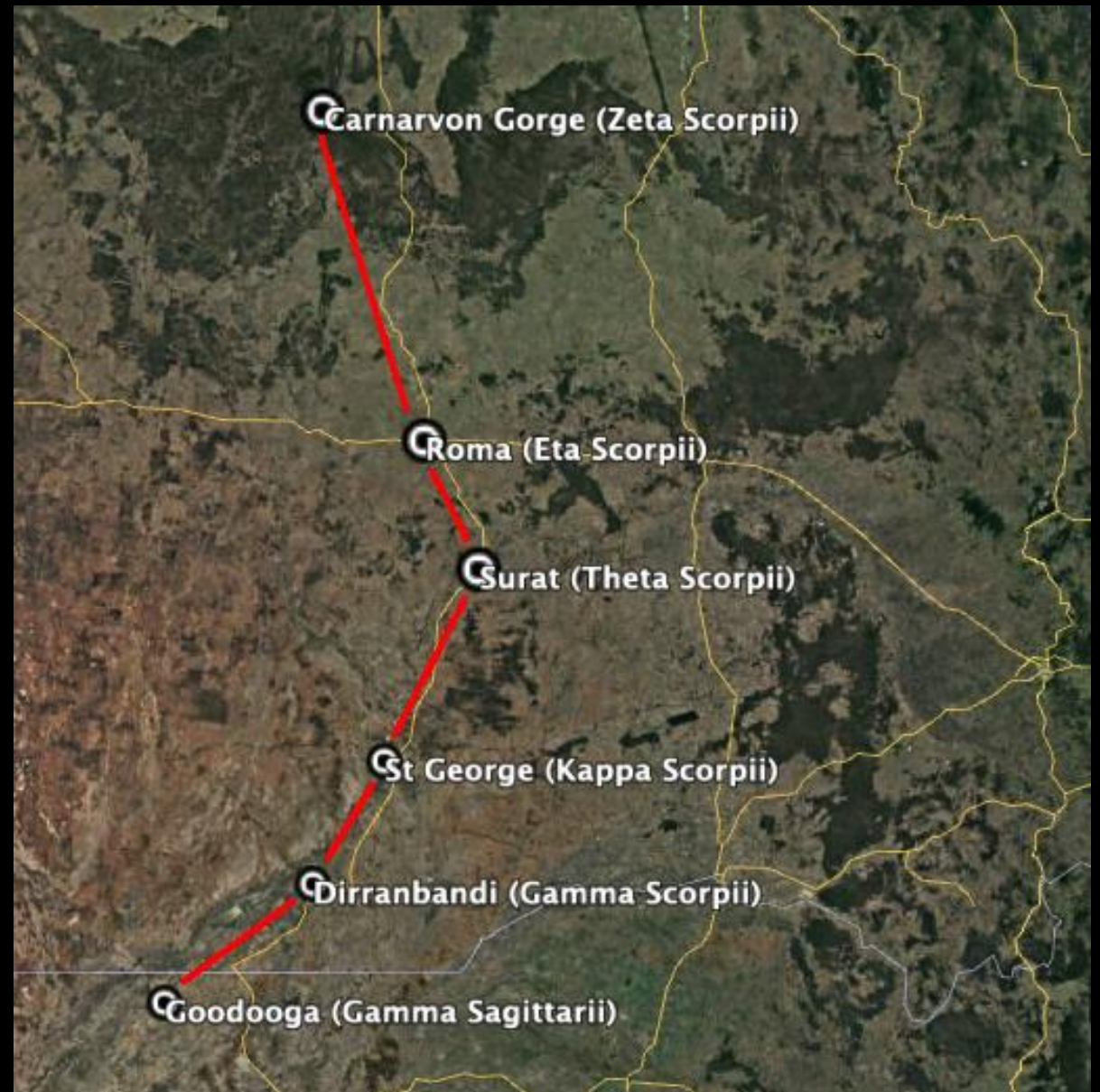
20h

17h

19h

18h





or plant our gardens. Most of us cannot even see the Milky Way. But First Nations Elders around the world still maintain this knowledge, and there is much we can learn from them.

These Elders are expert observers of the stars. They teach that everything on the land is reflected in the sky, and everything in the sky is reflected on the land. How does this work, and how can we better understand our place in the universe?

Guided by six First Nations Elders, Duane Hamacher takes us on a journey across space and time to reveal the wisdom of the first astronomers. These living systems of knowledge challenge conventional ideas about the nature of science and the longevity of oral tradition. Indigenous science is dynamic, adapting to changes in the skies and on earth, pointing the way for a world facing the profound disruptions of climate change.



‘A ground-breaking book of enormous scope’
BRIAN SCHMIDT, Nobel Laureate in Physics

‘A glimpse into Indigenous ways of reading landscapes reflected in the night sky through ancient processes of inquiry.’
Dr TYSON YUNKAPORTA, author of *Sand Talk*

‘A wonderful combination of scholarship and poetry.’
Dr ANNETTE S. LEE, Lakota astrophysicist

‘Beautiful, engaging, and startlingly profound.’
ALAN DUFFY, Professor of Astrophysics

‘timely and impactful . . . an awe-inspiring collaboration.’
BRONWYN CARLSON, Professor of Indigenous Studies

Cover design: Philip Campbell Design
Cover artwork: Sagar Passi, Mam Edge, 2012



First Astronomers

DUANE HAMACHER
WITH ELDERS AND KNOWLEDGE HOLDERS



The First Astronomers

How Indigenous Elders
read the stars

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