



HURTIGRUTEN

Astronomy Voyage

Dr Darren (Das) Baskill

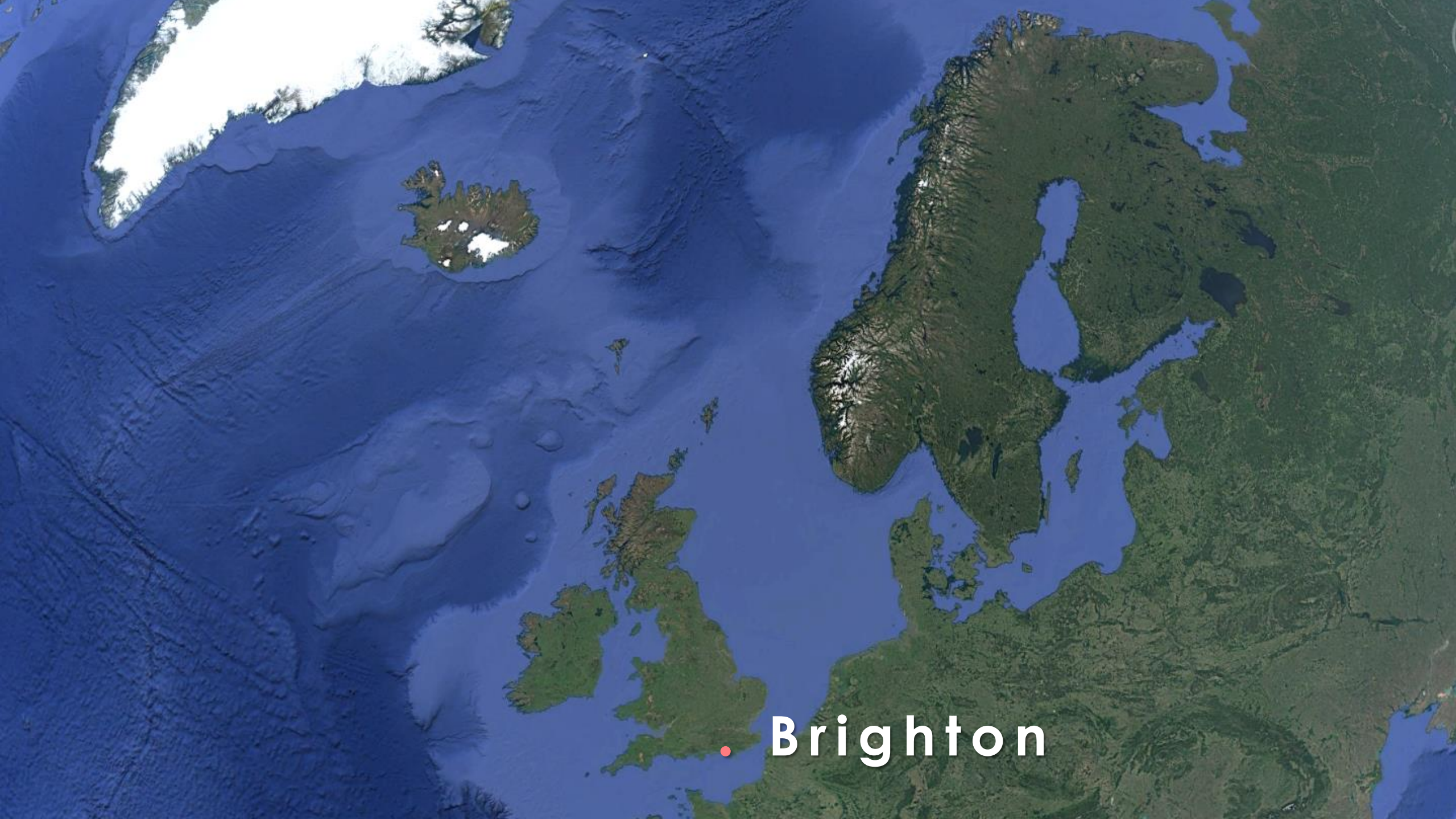
Astronomer at the University of Sussex, UK

Welcome & Introduction

Dr Darren (Das) Baskill

Astronomer & lecturer in Physics & Astronomy
at the University of Sussex, Brighton, England





• Brighton

A satellite-style aerial photograph of the South East of England. The land is covered in dense green vegetation, with some urban areas visible as grey patches. The coastline is irregular, with a prominent peninsula on the right side. The sea is a deep blue. Two labels are overlaid on the image: 'London' in the upper left and 'Brighton' in the lower left, with a small red dot marking the location of Brighton.

London

Brighton

WELCOME & INTRODUCTION

Lecturer in Physics & Astronomy
at the University of Sussex,
also running our outreach
programme.

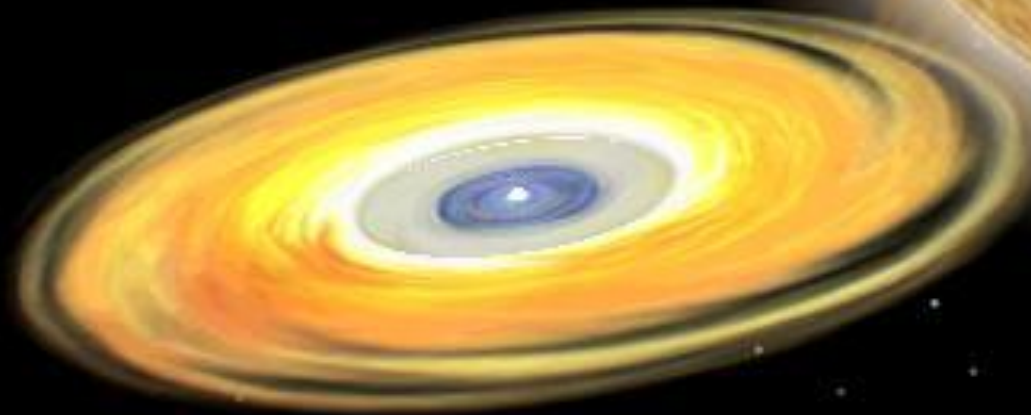
Previous jobs include:

- Educator at the Royal
Observatory Greenwich
- XMM-Newton calibration scientist
- PhD in X-ray astronomy (CV stars)



Cataclysmic Variable Stars

Artistic impression: these binary stars are too close together to see them separately in a telescope.





Observing in Hawai'i...

ROYAL OBSERVATORY GREENWICH



Astronomy Photographer of the Year

See the world's greatest space photography at the National Maritime
Museum

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Astronomy
without a telescope

- 1. The Sun
- 2. The Moon
- 3. Planets
- 4. Stars
- 5. Galaxies
- 6. The Universe

Doing outreach in schools & elsewhere



Doing outreach in schools & elsewhere



SCIENCE MILE

Doing outreach in schools & elsewhere



Doing outreach in schools & elsewhere

MEDIA WORK



■ US report criticises Israel's use of American-supplied weapons in Gaza

15:37

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Why do the aurora look better through a camera? And how do you spot a fake image? Q&A with an astrophotographer

Published: May 14, 2024 2:37pm BST

Aurora spotting in Kendal, northern England, May 10, 2024. Stop Press Media/Alamy

On 10 and 11 May 2024, large parts of the world were treated to their most spectacular display of the aurora – the northern and southern lights – in a generation. Thanks to modern cameras, the phenomenon was all over social media. It seems almost everyone knew someone who

Author



Darren Baskill
Lecturer, Physics and Astronomy,
University of Sussex



LECTURE PROGRAMME

- Tonight's Night Sky
- Astrophotography
- The Aurora
- The Scale of the Universe
- The birth & death of stars & galaxies
- The violent Universe
- Modern Astronomy: Life as a
Astronomer & Tools of the Trade
- Why We Are Here: A 13.8-billion
year-old story



Tonight's Night Sky



Dr Darren (Das) Baskill
Astronomer at the University of Sussex, UK



Stellarium

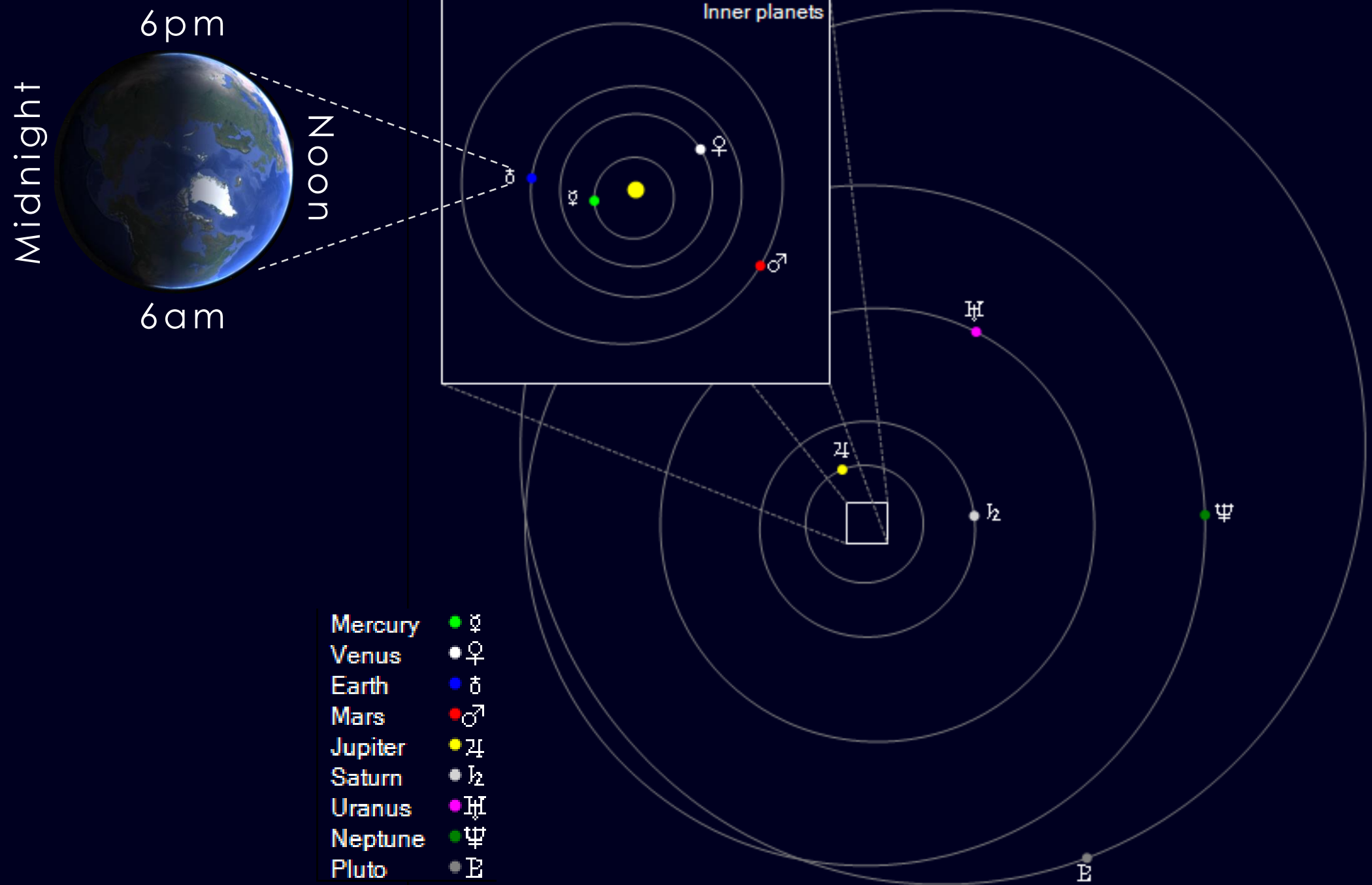
TONIGHT'S NIGHT SKY: HIGHLIGHTS

- Jupiter & Venus (just after sunset)
- The Moon appears as a thin crescent on the 19th/20th, going to first quarter
- Constellations such as Orion, Gemini, Leo, Ursa Major, Cassiopeia & Corona Borealis
- The Hyades & Pleiades star clusters
- The Orion nebula



Our Solar System

As of 14th March 2026



Our Solar System

As of 14th March 2026

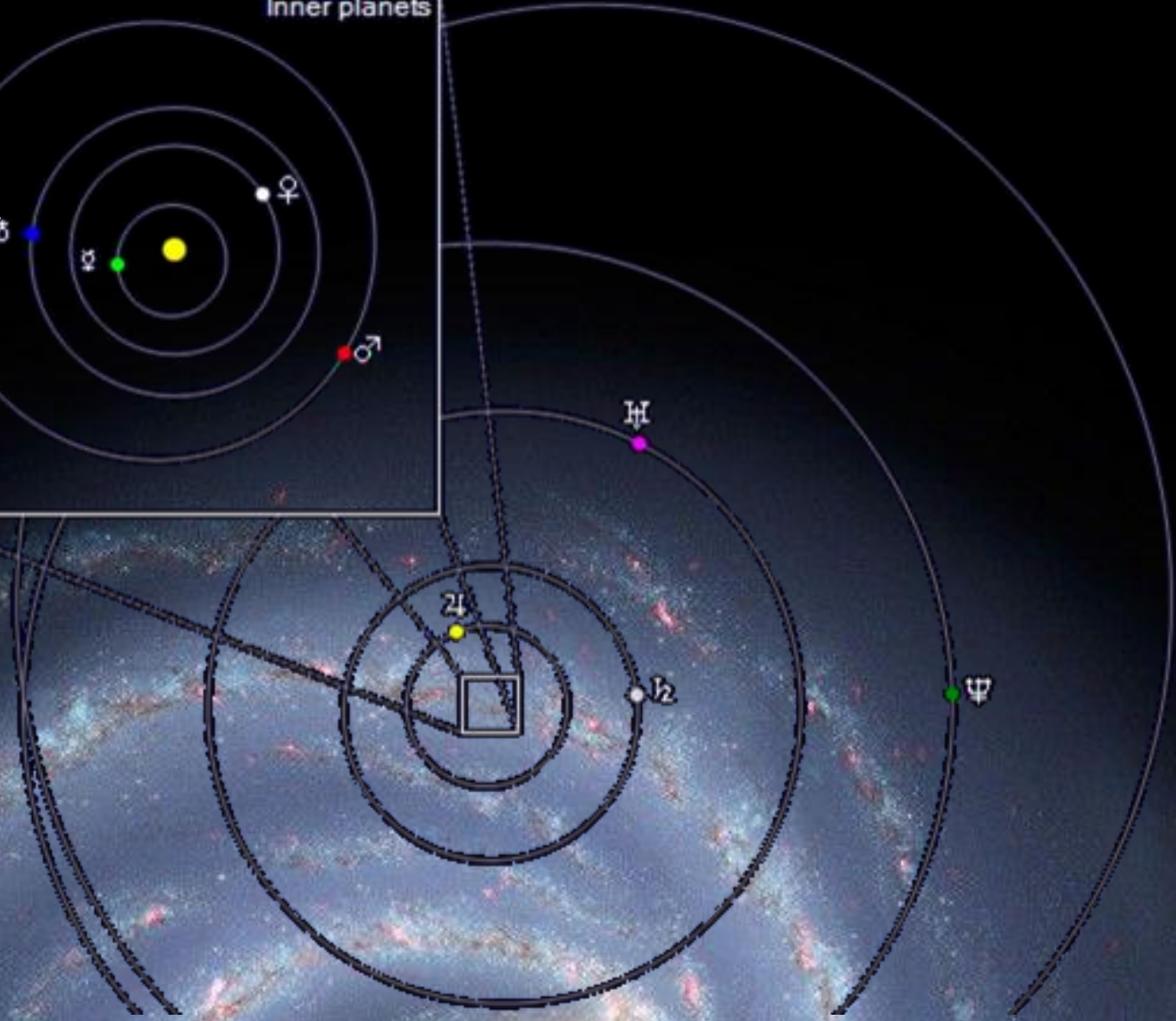
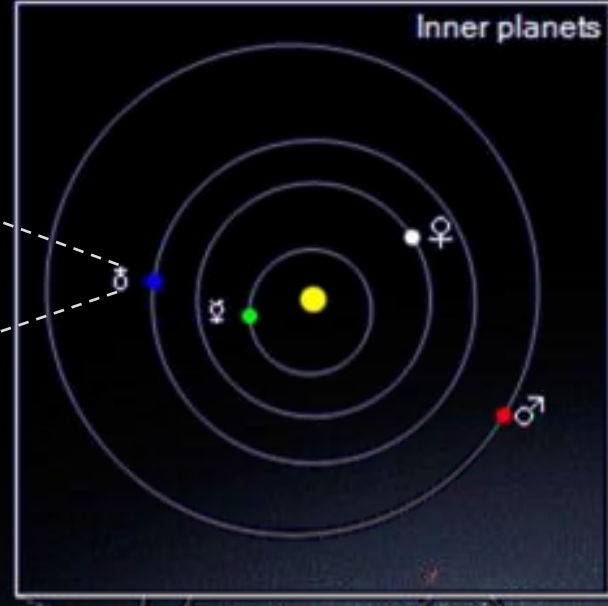
Midnight



6am

6pm

Noon





CONSTELLATIONS



What does this pattern of stars look like to you?

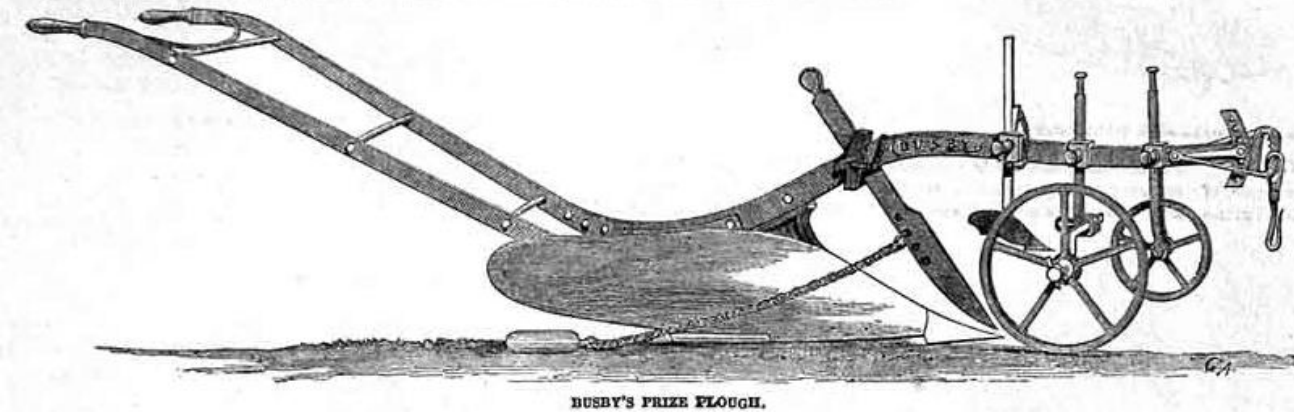
The background of the image is a dark, starry night sky. It features a dense field of stars of various colors, including white, yellow, and blue. A prominent pattern of stars is visible, forming a shape that resembles a large, irregular 'V' or a similar geometric figure. The stars are scattered across the entire frame, with some appearing brighter and larger than others.



URSA MAJOR.

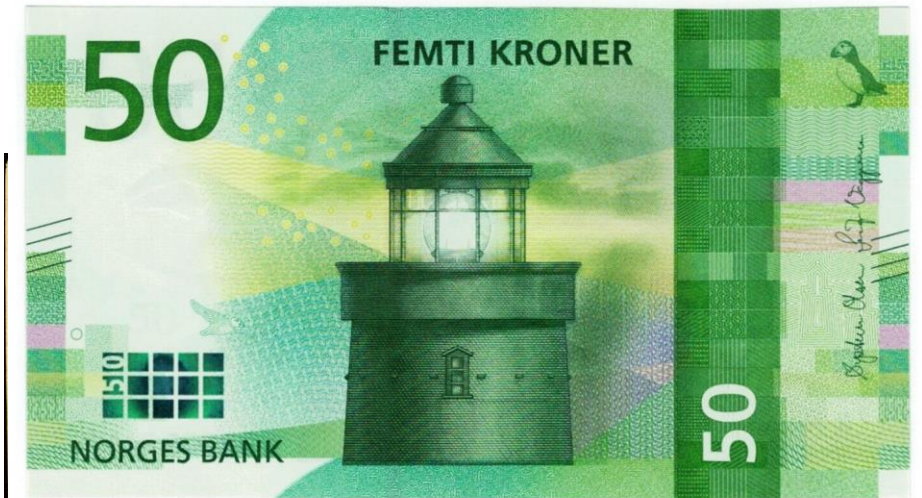


CONSTELLATIONS



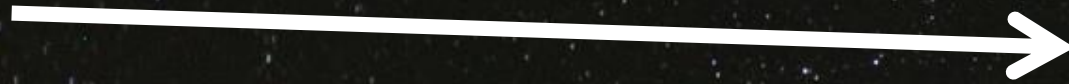
Ursa Major is also known as...

- The Plough (UK)
- The Big Dipper (US)
- Karlsvogna, or Man's Chariot (Norway)
- The Great Wagon (Germany)
- The Saucepan (France)



The two front stars of the Plough
point to the North Pole star, Polaris

Merak >
Dubhe >



CONSTELLATIONS

Constellations are random collections of stars, made into patterns.

The 88 constellations act as guides across the night sky.





Look at Orions' sword/groin,
to find a gas cloud just with your eyes.



Arcturus

The plane of our solar system - the **ECLIPTIC**.

Mars

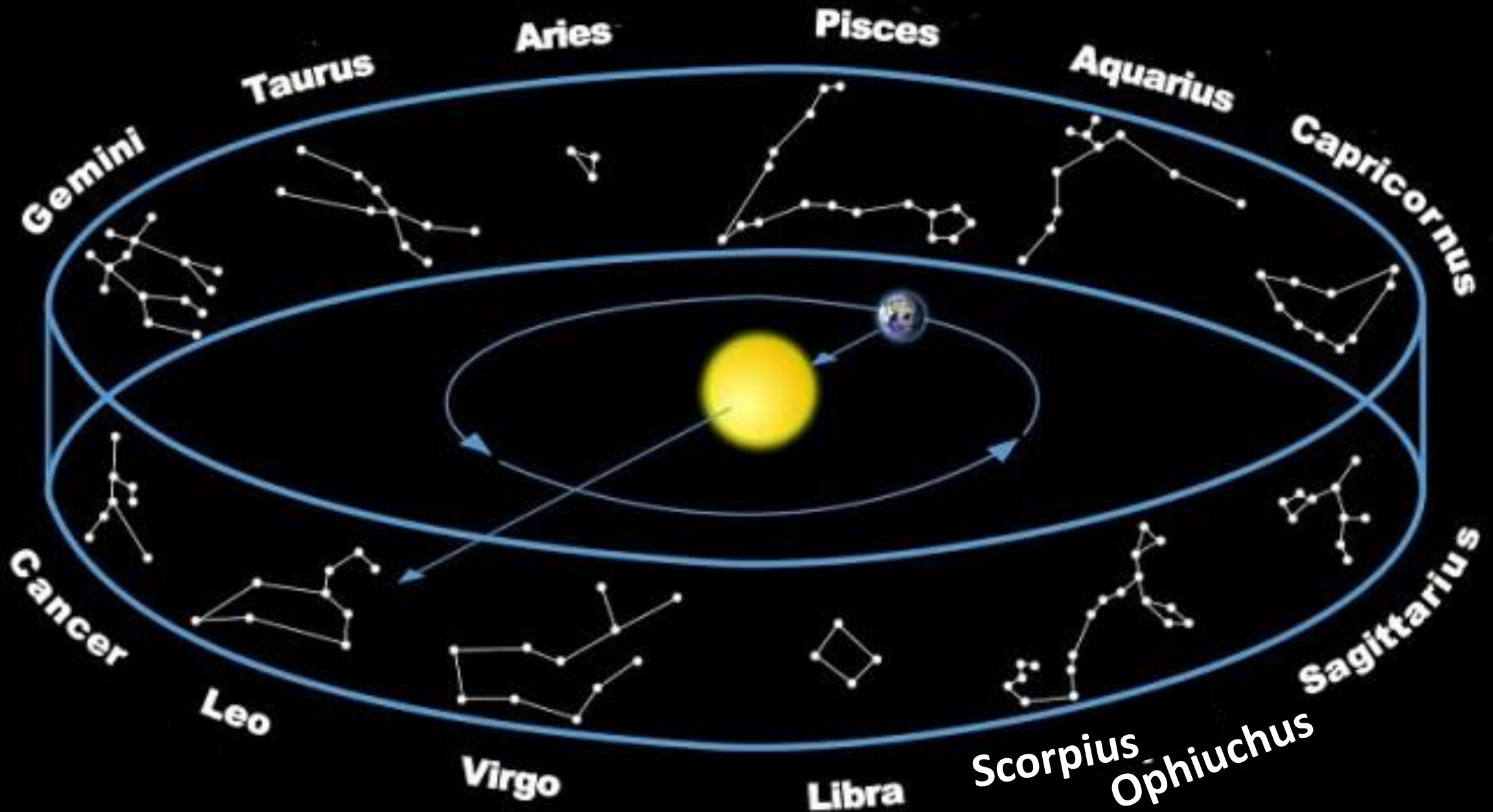
← Saturn

Jupiter

Venus >

Planets

NOTE: Planet means "wanderer"

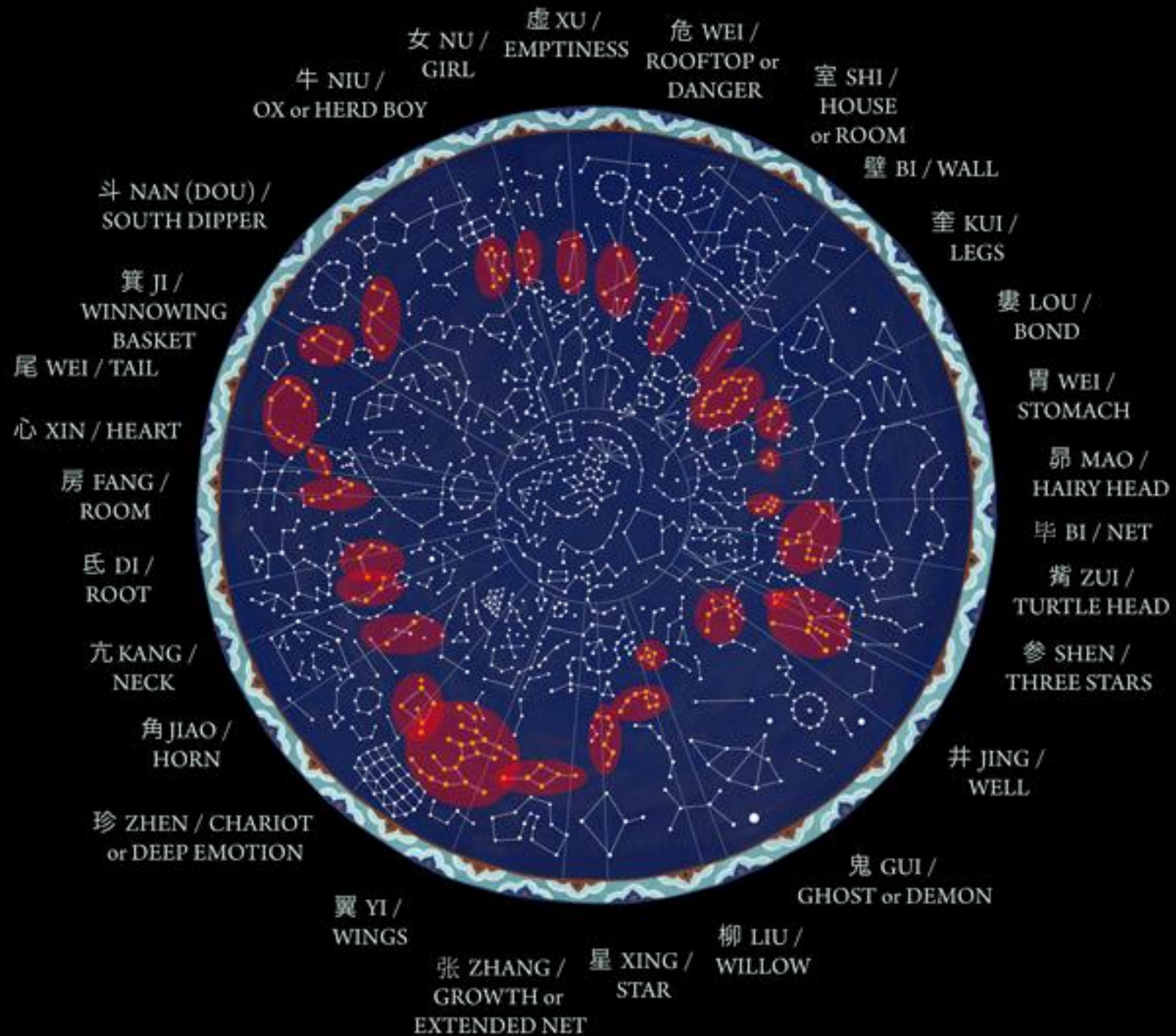


13 constellations form a band called the **Zodiac**

The Chinese
divide the sky
into four
symbols and
28 mansions



Chinese Constellations

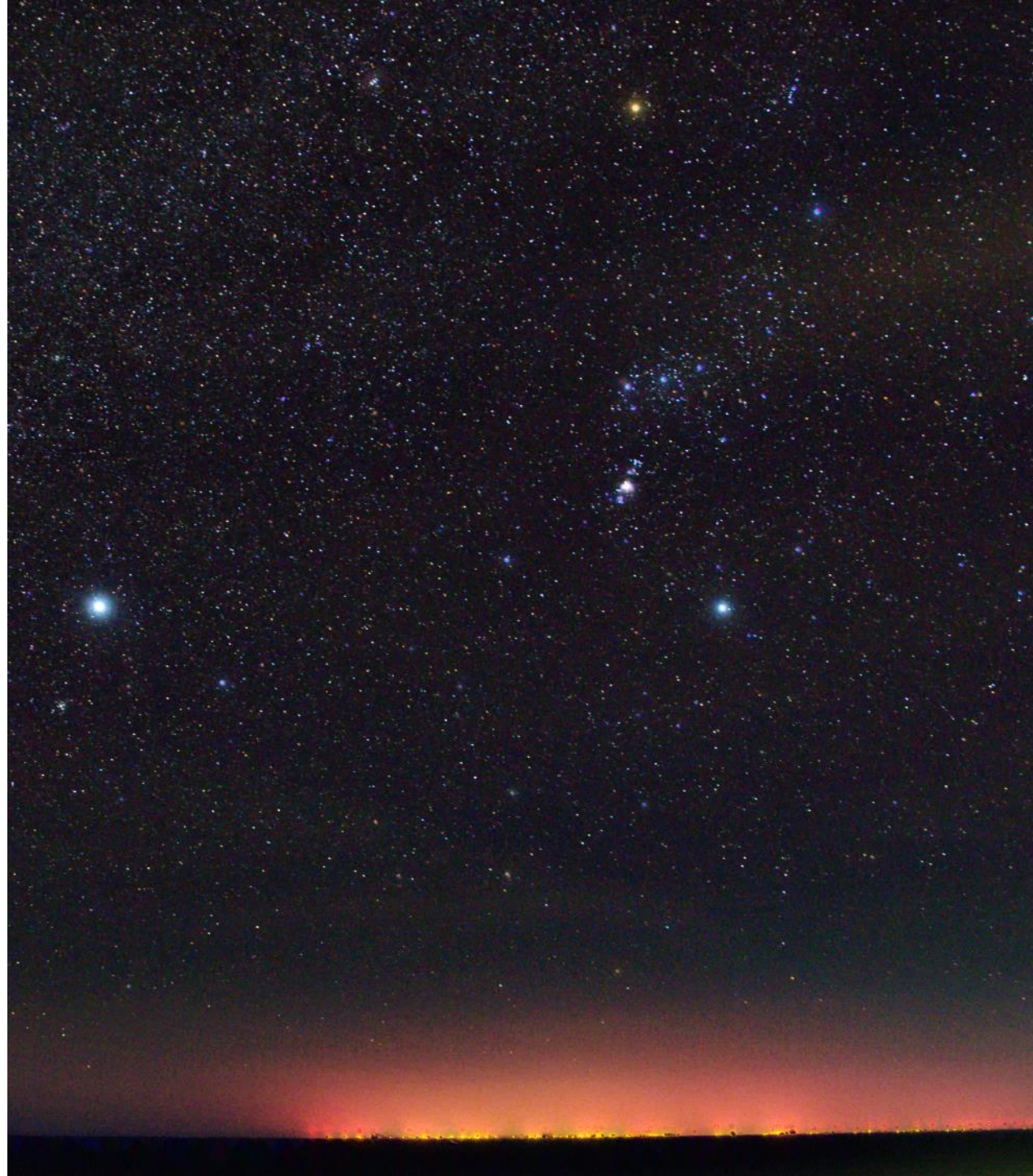


DISTANCES

Estimating the distances to stars is very difficult.

A faint nearby star looks the same as a brighter, more distant star.

In the constellation of Orion, which star is the most distant?



DISTANCES

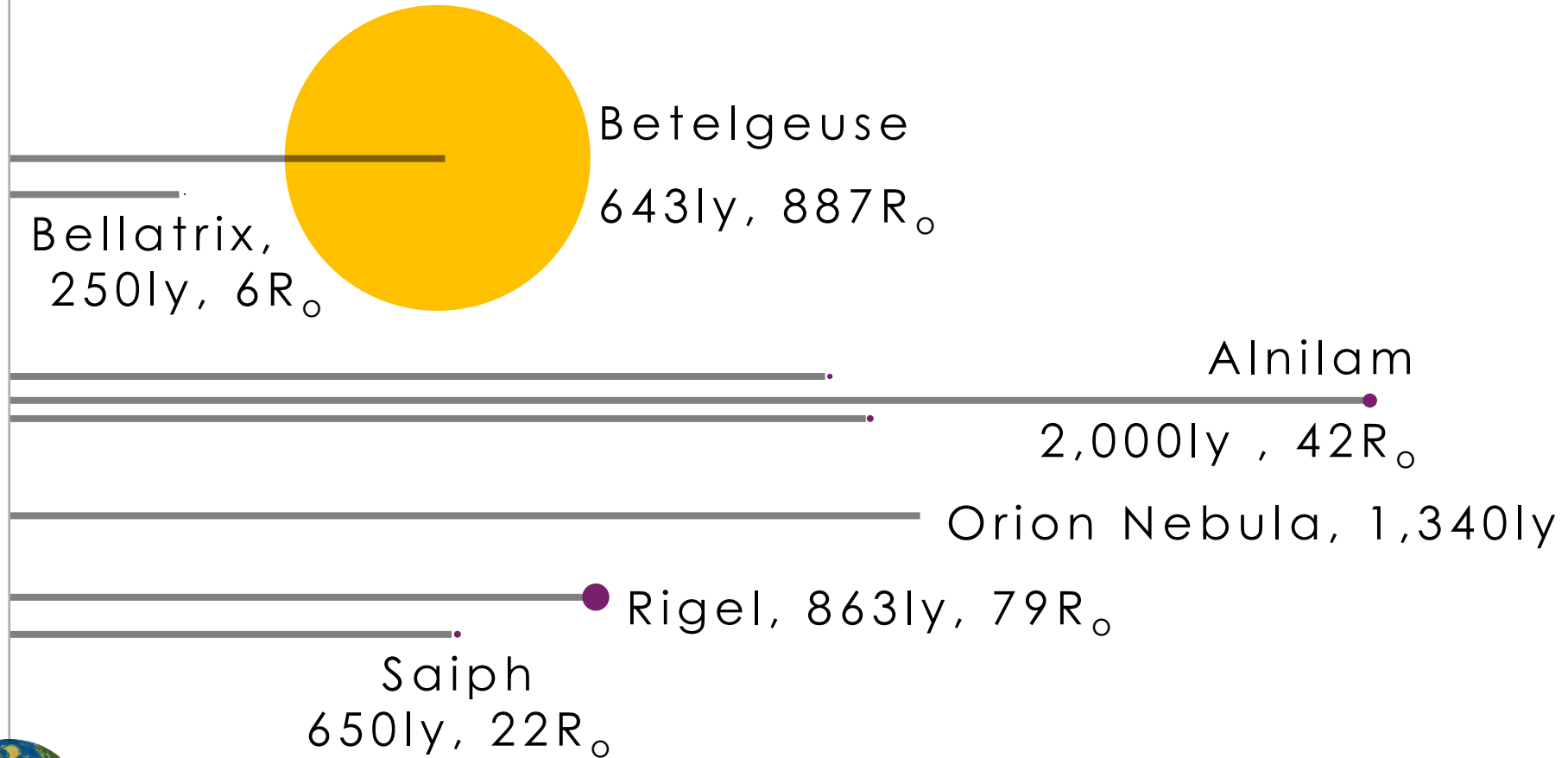
In 1838, FW Bessel used parallax to measure the distance to the star 61 Cygni as 10.4ly.

This single measurement increased the size of the Universe by **10,000-fold!**



DISTANCES

Distances to the stars in Orion





Astronomy Voyage



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