

**Cosmic Connections:
An Introduction to Astronomy
and
Maine's Magnificent Night
Skies**

Midcoast Senior College
Russell F. Pinizzotto, Ph.D. (Russ)

Unit 15

Practical Stargazing and Wrap-Up







Refractor
Telescope



Reflector
Telescope



Catadioptric
Telescope



Dobsonian
Telescope



Smart
Telescope

SkySafari for observing lists and locations



Catalogs of Astronomical Objects

Messier Catalogue 110 objects catalogued by Charles Messier and Pierre Méchain

Caldwell Catalogue 109 objects compiled by Patrick Moore

New General Catalogue 7,840 objects compiled by John Louis Emil Dreyer

Index Catalogues 5,386 objects supplements published by Dreyer

https://en.wikipedia.org/wiki/Messier_object

https://en.wikipedia.org/wiki/Caldwell_catalogue

https://en.wikipedia.org/wiki/New_General_Catalogue

Planning an observing session – Tsula’s Big Adventures

<https://www.youtube.com/watch?v=7RLyzQU9xkY>

1. Check the weather and the phase of Moon
2. Prepare an observing list – maybe 10 objects
3. Organize everything you need – see next 2 slides
4. Don’t forget your binoculars!!!
5. Record your observations
 1. Take your time with each object
 2. Detailed notes and sketches
6. Have fun!

Planning an Observing Session – Things to Take Along – Page 1

Winter Observing

Heated Socks, toe and/or feet warmers

Hand warmers

Heat wraps – Traditionally used as a treatment for sore muscles, these wraps provide heat for up to 12 hours.

Long Johns

Blankets

Summer Observing

Bug spray

Food and Drink

Amateur astronomers need to fuel their observations with the right snacks and beverages!

It seems everyone has a signature food or drink item they bring observing.

Bottled water, Coffee, Soda, Hot chocolate

Chips, Granola bars, Peanut M&Ms, Oreos, Cheez-Its

Handouts for beginners – If you're going to a star party or bringing someone who's new to observing, it's a good idea to have some printed materials covering the basics of astronomy. If you're observing in a crowded public place, people may stop and ask you about what you're doing, so these can come in handy.

Protection from wildlife – Many of our fans told us that they observe in dark-sky locations near bears, mountain lions, and other dangerous wildlife.

Power – Make sure you have enough power for your telescope and other electronic gadgets. A Celestron Power Tank 17 and a few spare batteries should do the trick.

Planning an Observing Session – Things to Take Along – Page 2

Creature Comforts

Observing chair or stool – Choose an observing chair you can sit in comfortably for extended periods. Scott M. likes using a beanbag chair!

Music

Hat

Lip balm

Sketch pad – Sketching what you see through the eyepiece is the oldest (and cheapest) form of astroimaging!

Lens cleaning tool – Bring a small tool to clean your optics, especially if it may be windy or dusty. Make sure your brush is specifically made for lenses and optical elements, like our LensPen.

Level – If your tripod doesn't have a built-in level, a simple bubble level is a real time-saver when you're setting up your tripod!

Toolbox – In case anything goes wrong, James F. keeps a toolbox handy for on-the-spot equipment adjustments.

Hair dryer – If moisture or humidity may pose a problem, Michael P. recommends bringing a small hair dryer along to zap water off of your optics!

Star maps/smartphone app – Star charts are a great way to navigate the night sky. Now, you have the option of using a paper star chart or a digital one. **Binoculars** – Binoculars are a great tool for observing the night sky.

Red flashlight – It takes your eyes a while to adapt to darkness, which helps you see finer details through your telescope. Use a red flashlight to provide visibility while your eyes are dark-adapted. You can also deck out your tripod legs with red lights so people don't trip on them in the dark. And don't forget red filters for anything that emits light, like your laptop or smartphone screen!

Laser pointer – If you're observing in a group, a green laser pointer can help you point out objects for everyone to see. Be careful to observe all laws regarding laser pointers where you live.

White headlamp for cleanup – When you're done observing, a regular white headlamp can help you clean up quickly while keeping your hands free.

Cosmic Connections:

An Introduction to Astronomy and Maine's Magnificent Night Skies

- Unit 1 Orientation to Maine's Magnificent Night Skies
- Unit 2 Understanding Motion and the Celestial Sphere
- Unit 3 Seasons and the Tilted Earth
- Unit 4 The Moon: Phases and Patterns
- Unit 5 Tides and Eclipses
- Unit 6 The Inner Circle
- Unit 7 The Gas and Ice Giants
- Unit 8 Dwarf Planets, Asteroids, Comets, Meteoroids
- Unit 9 Our Sun: The Living Star
- Unit 10 The Life and Death of Stars
- Unit 11 Exoplanets: The Search for New Worlds
- Unit 12 The Milky Way: Our Cosmic Metropolis
- Unit 13 Galaxies: The Islands of the Universe
- Unit 14 Cosmology: The Beginning and End of Everything
- Unit 15 Practical Stargazing and Wrap-Up

Cosmic Connections



An Introduction to Astronomy and Maine's Magnificent Night Skies

Presented to

Jill Jensen

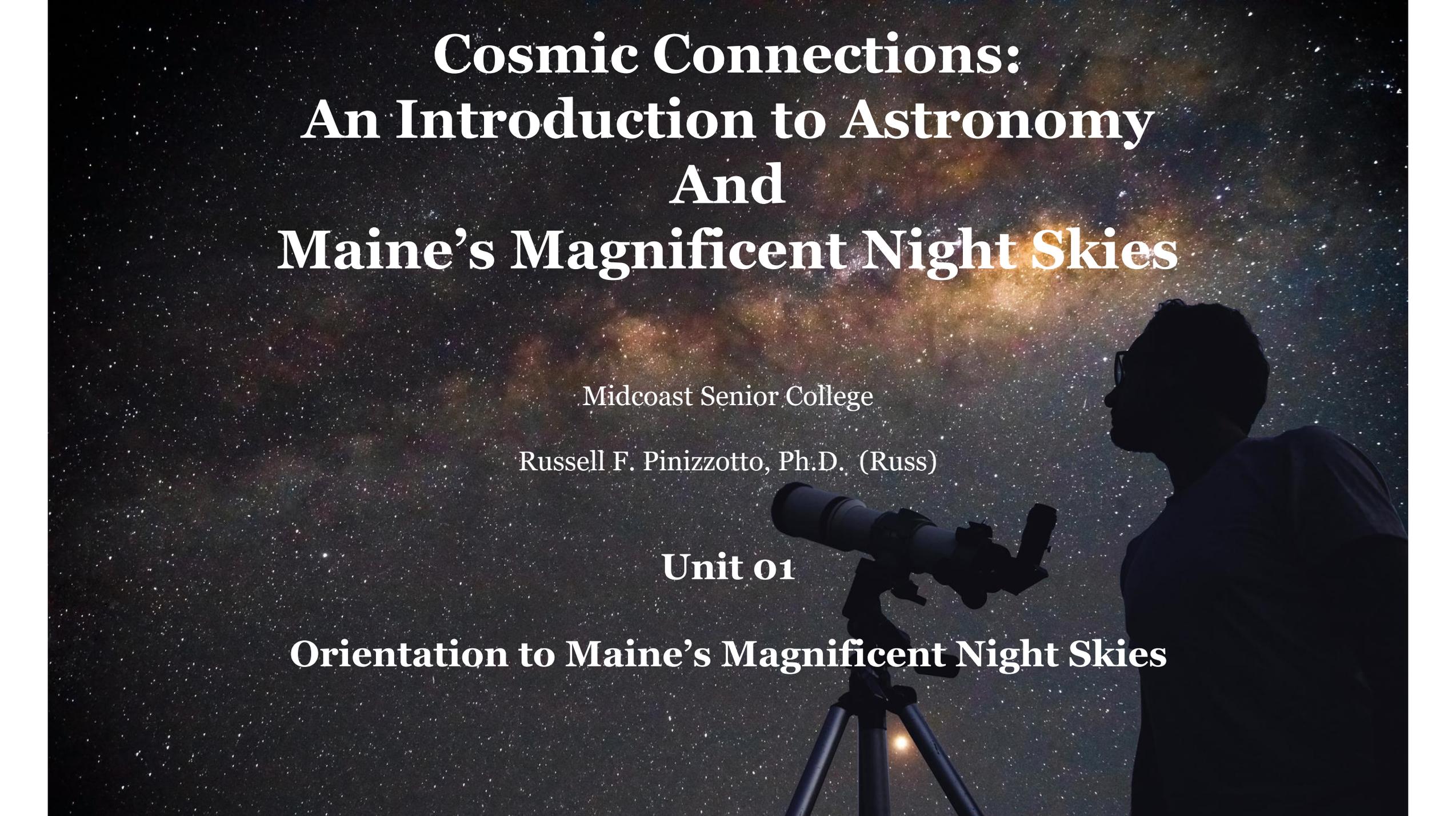
for attending the Midcoast Senior College course that investigated the constellations, motions of the stars, seasons, eclipses, tides, Moon, Sun, Planets, the Solar System, the life and death of Stars, the Milky Way, galaxies, cosmology, and practical stargazing

A handwritten signature in black ink that reads "R. Pinizzotto".

Russell F. Pinizzotto, Ph.D., Instructor

03 February 2026 to 24 March 2026

Border: vecteezy.com



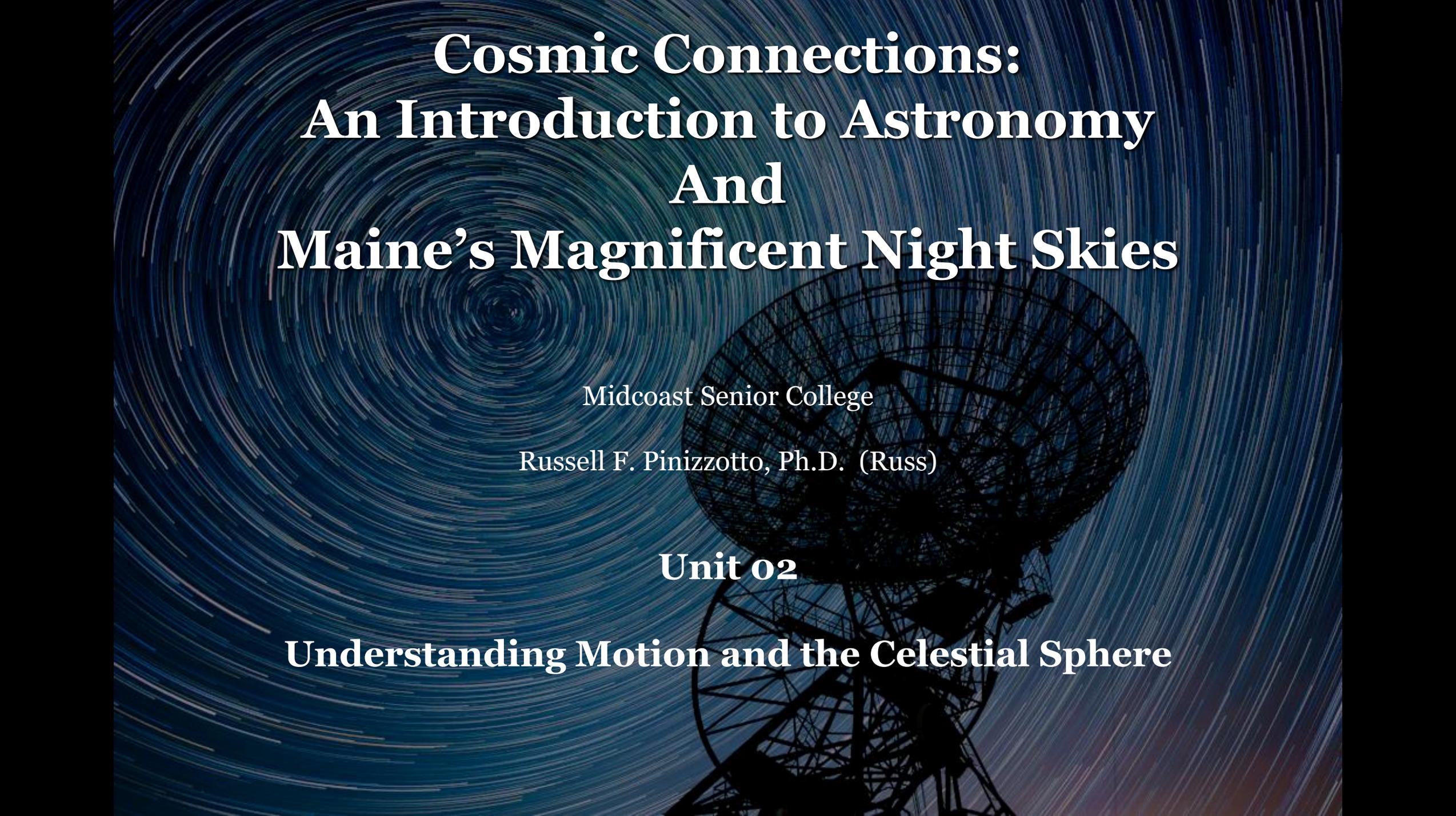
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Unit 01

Orientation to Maine's Magnificent Night Skies



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Unit 02

Understanding Motion and the Celestial Sphere



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Unit 03

Seasons and the Tilted Earth

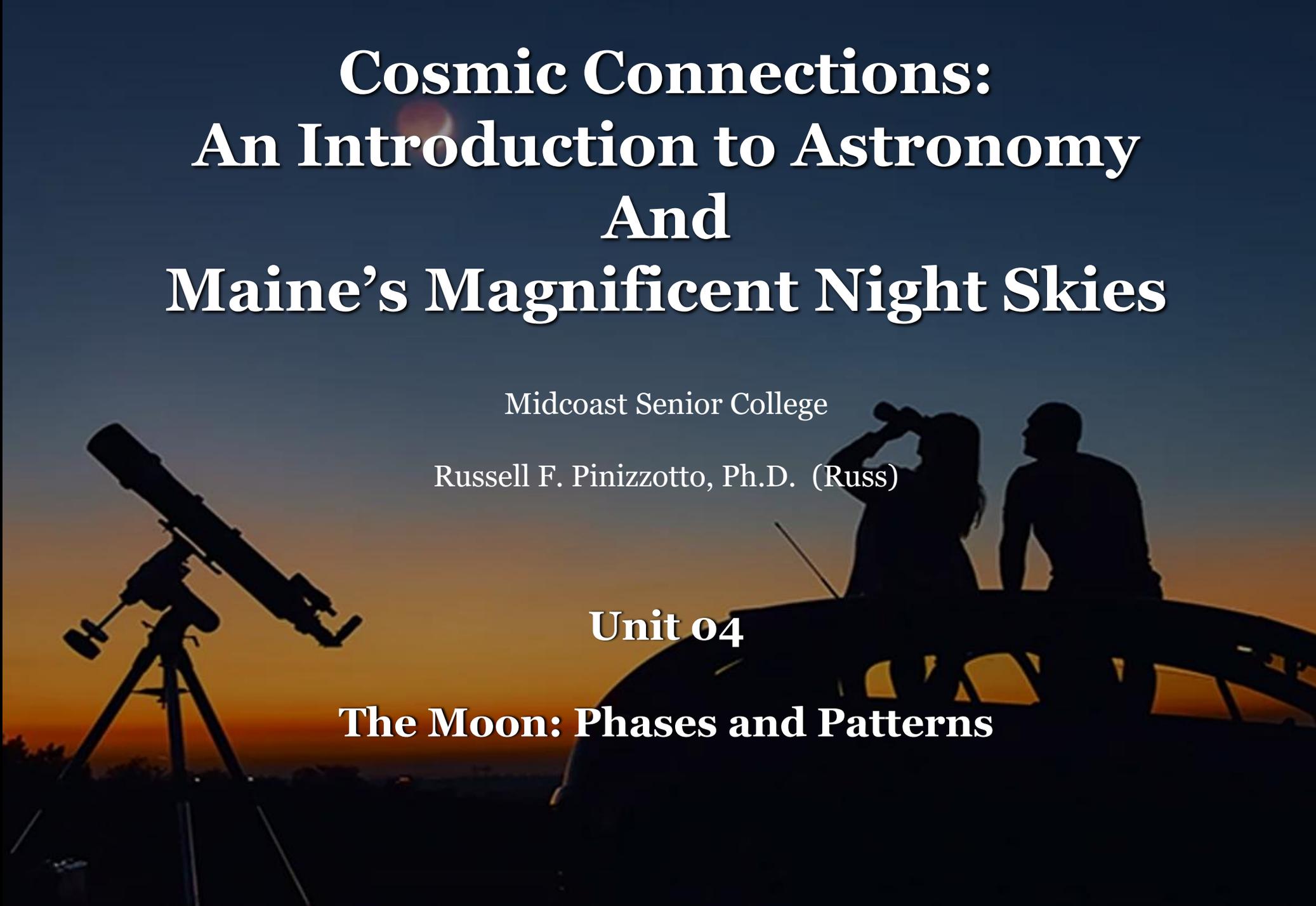
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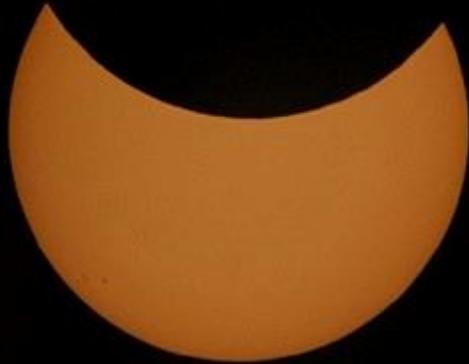
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Unit 04

The Moon: Phases and Patterns



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Unit 05

Tides and Eclipses

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Unit 06

The Inner Circle

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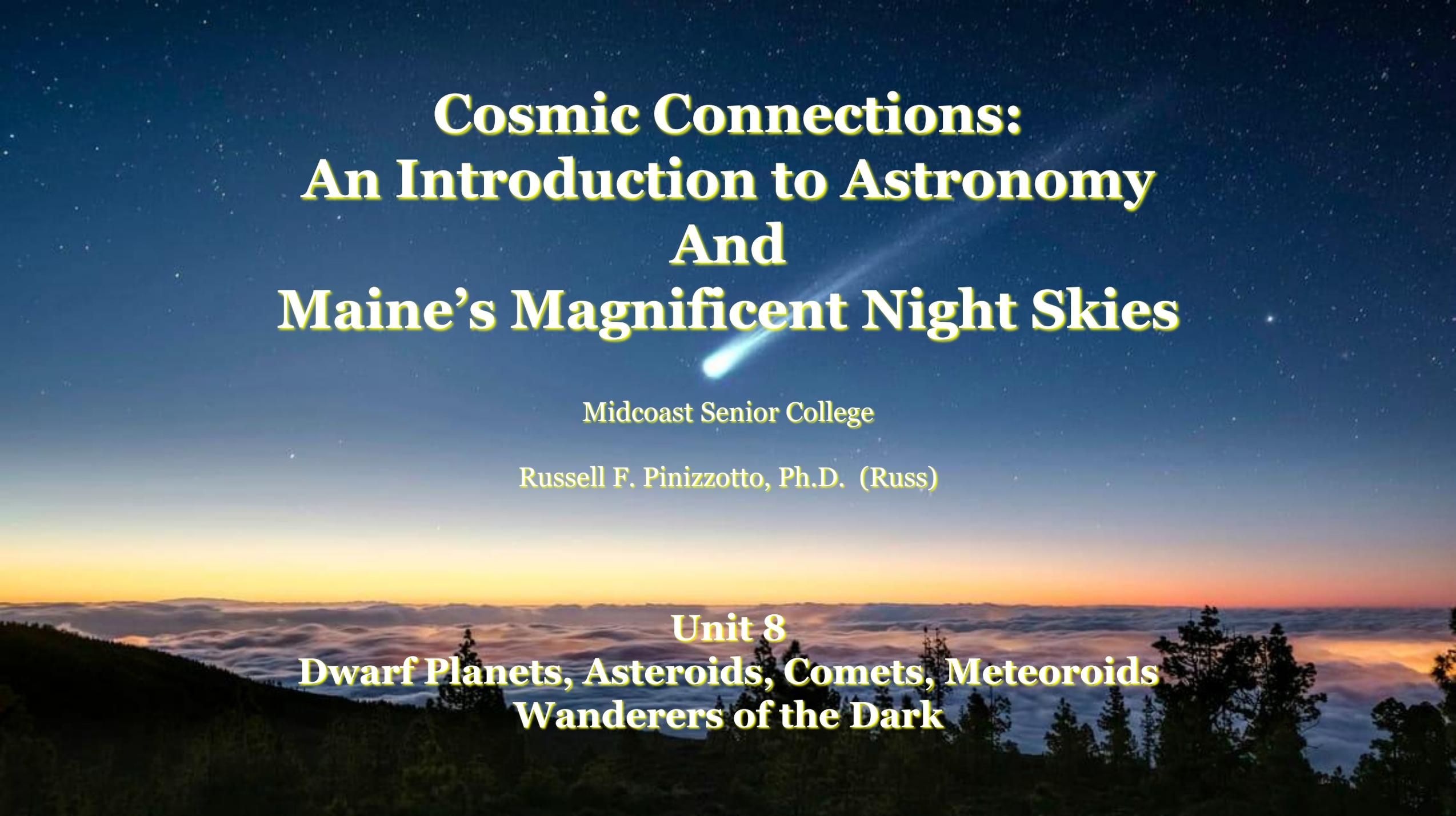


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Unit 7

The Gas and Ice Giants

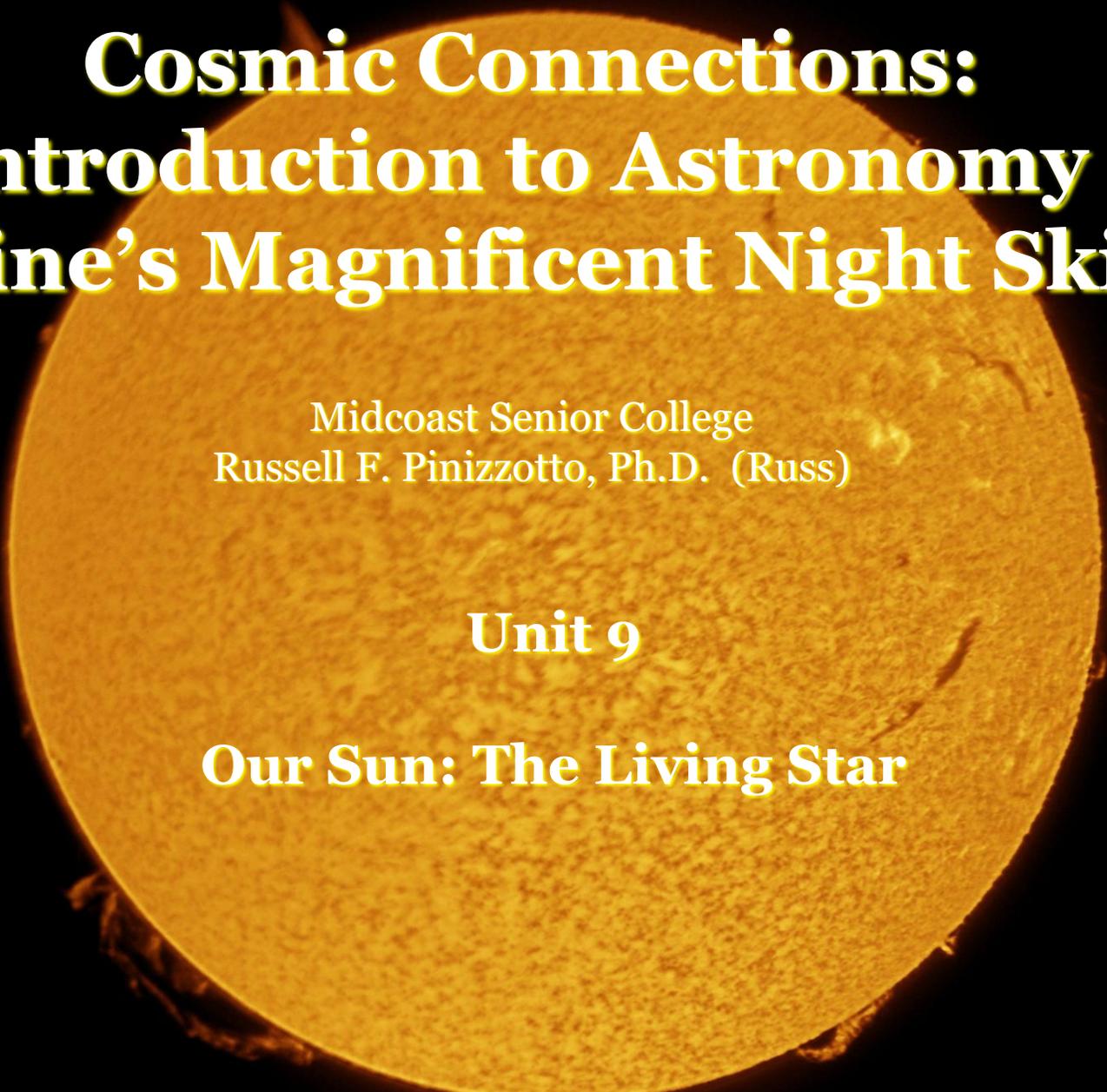


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**Unit 8
Dwarf Planets, Asteroids, Comets, Meteoroids
Wanderers of the Dark**



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Unit 9

Our Sun: The Living Star

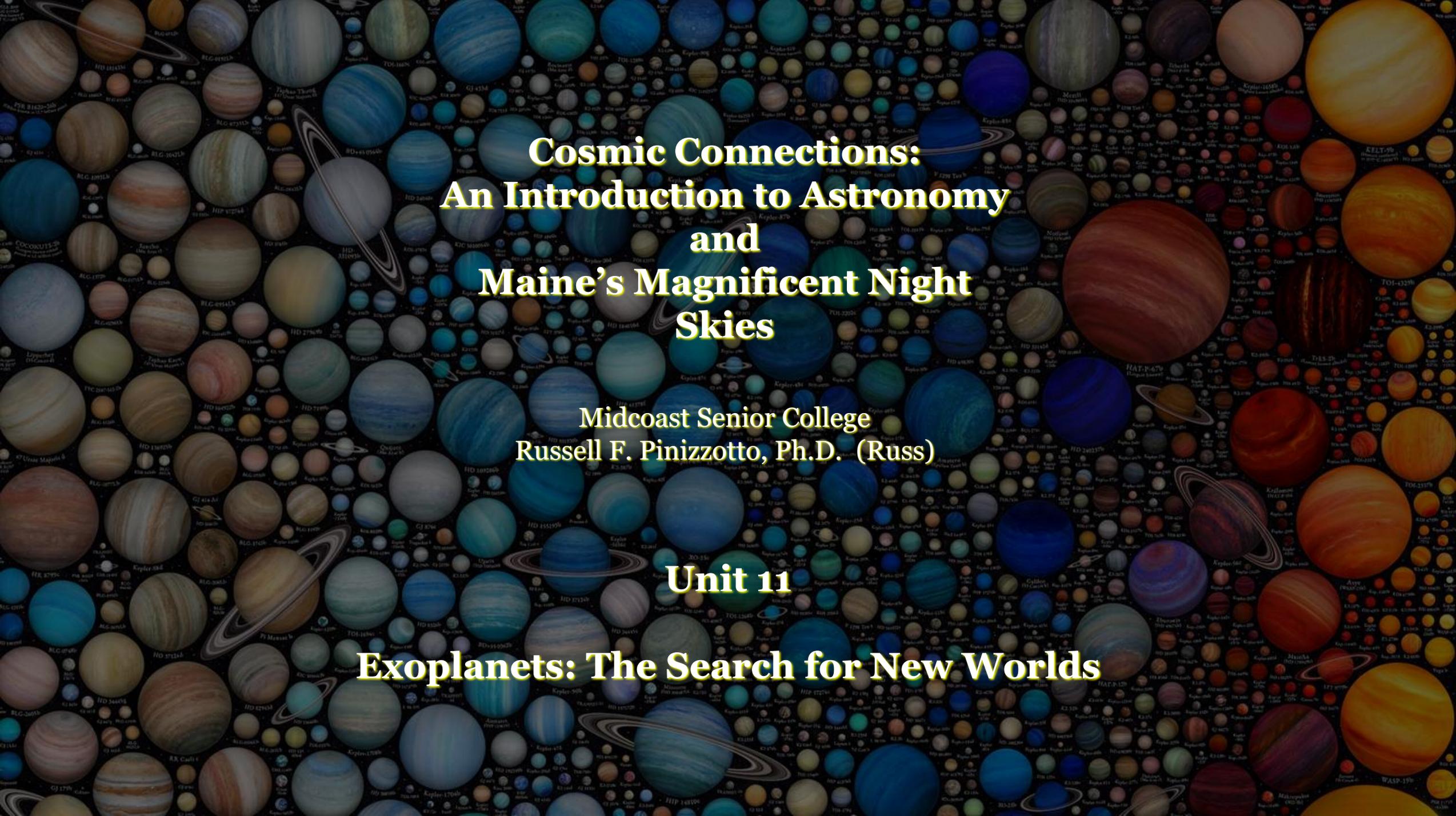
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Unit 10

The Life and Death of Stars





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Unit 11

Exoplanets: The Search for New Worlds

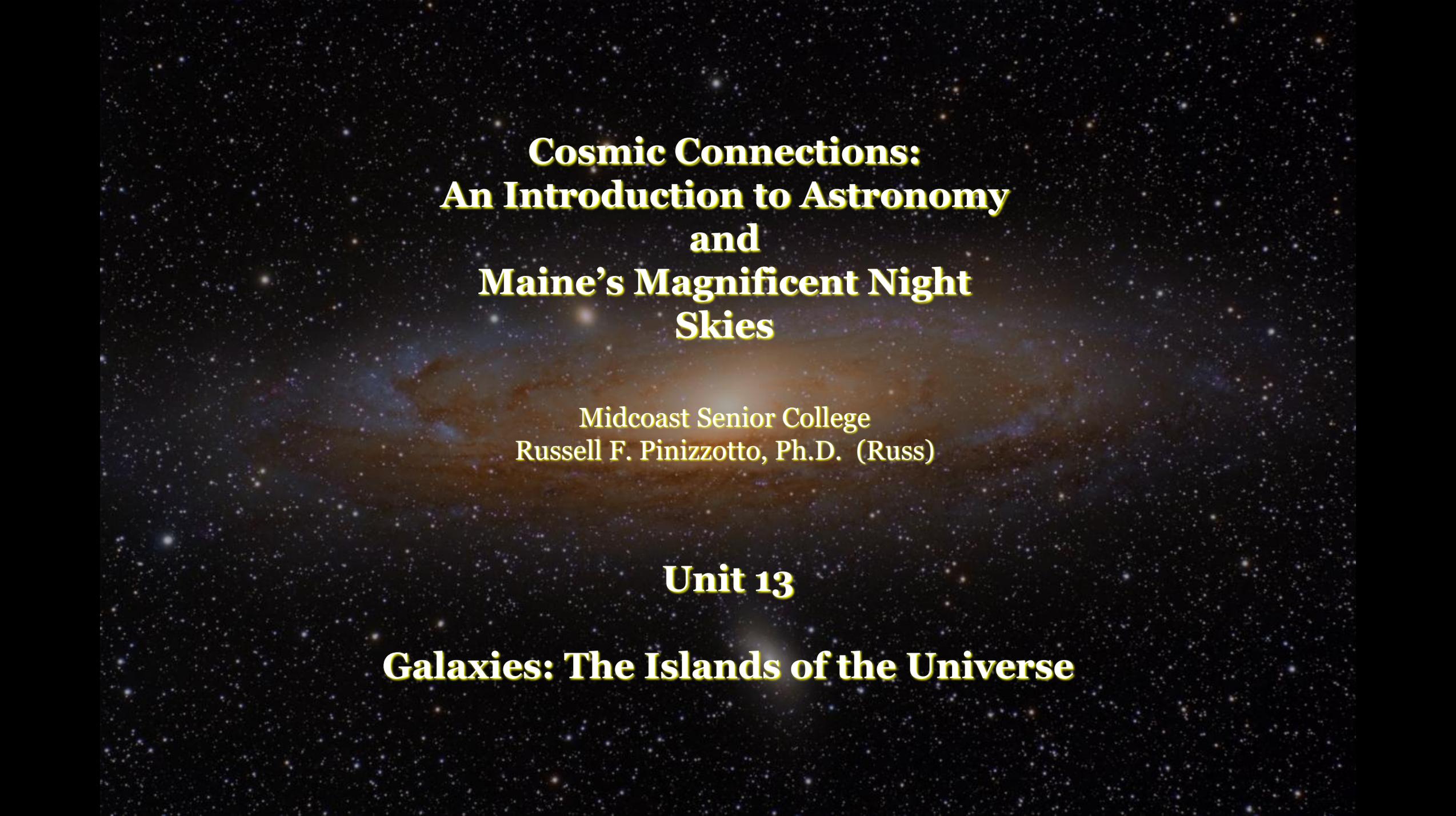
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Unit 12

**The Milky Way:
Our Cosmic Metropolis**



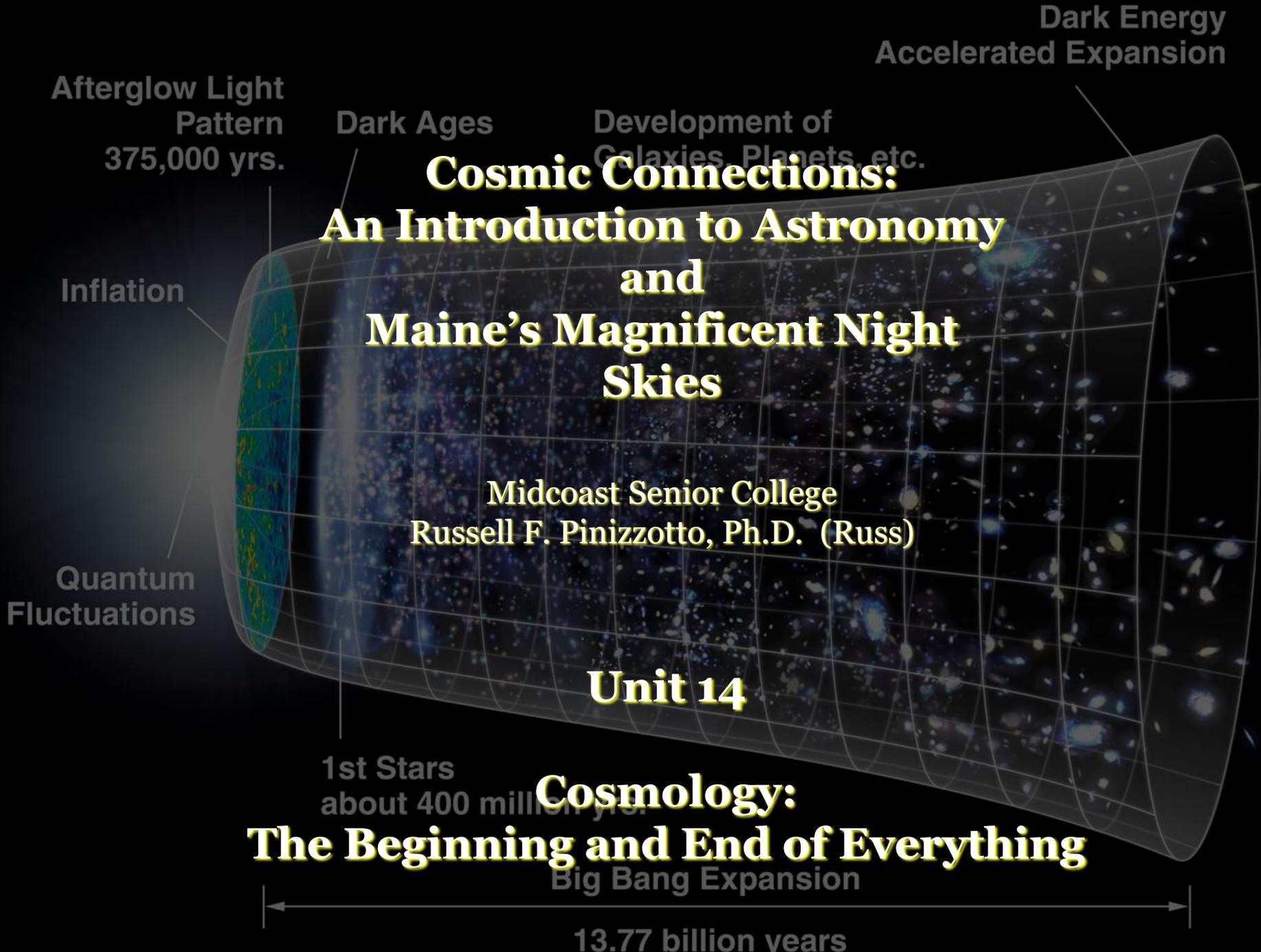


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Unit 13

Galaxies: The Islands of the Universe



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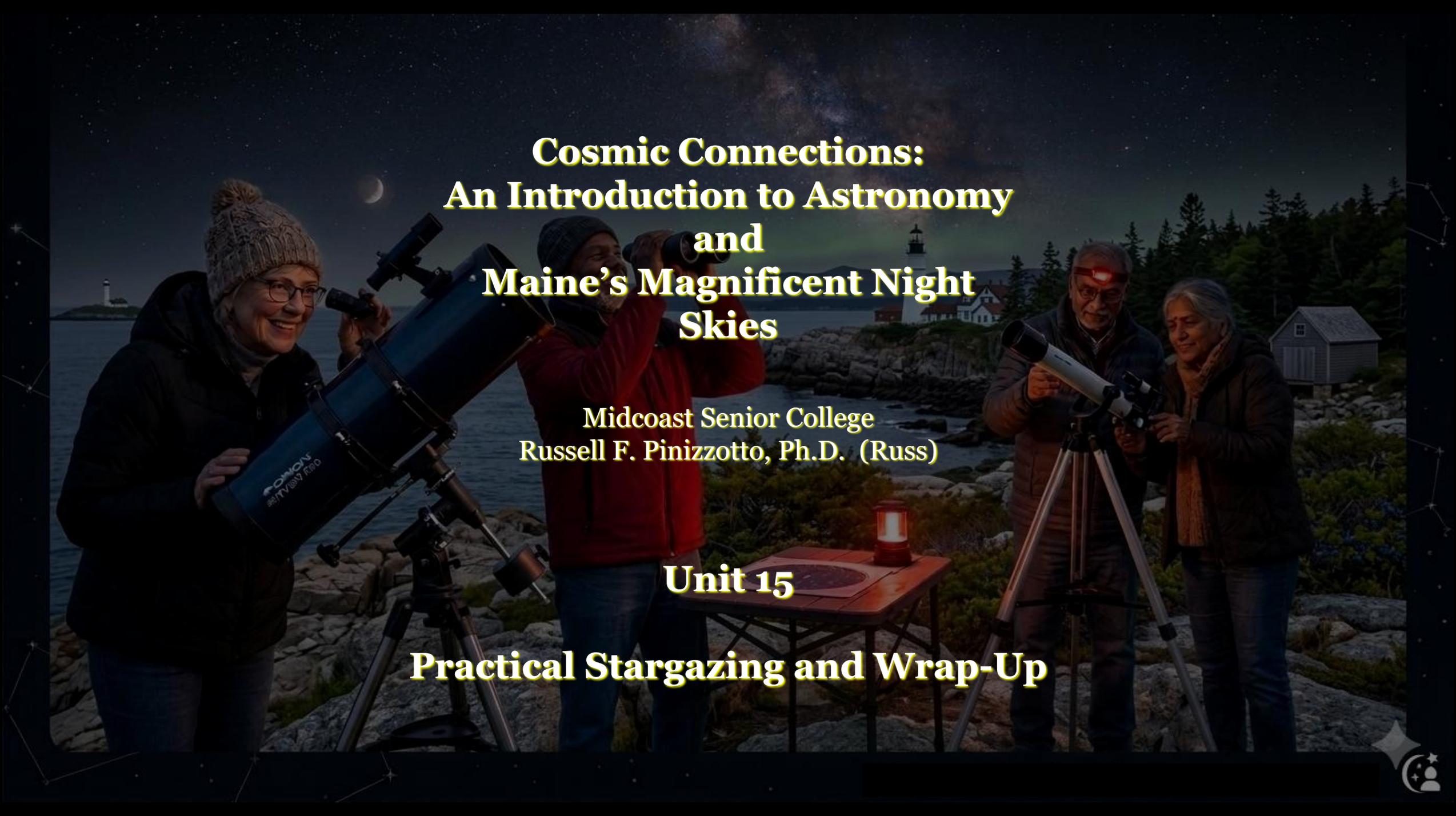
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Unit 14

**Cosmology:
The Beginning and End of Everything**

Big Bang Expansion

13.77 billion years



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Unit 15

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