CLARK COLLEGE
COMMUNITY AND CONTINUING EDUCATION

Prime-Time Learning Series - Summer 2025

STARGAZING 101

CLAMC/Ridgefield Campus (7000 Pioneer St), Room #208

Instructor: Prof. Kyle Dittmer

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Course Description (Item #19957, Fee $145):

Do you want to rekindle your childhood fascination with the starry night sky? Learn how to navigate the night sky – a cosmic parade of seasonal stars/constellations, planets, the Moon, comets, and meteor showers with star-charts, binoculars, and a telescope. Understand how and why the stars and planets move the way they do. Other topics: the Sun, stars, galaxies, and the Universe.

Learning Outcomes:

- Explain the motions of astronomical objects visible in the night sky, along with the phases of the Moon, Venus, and Mercury, in terms of solar system models and physical laws of motion.
- Compare and contrast the properties of solar system objects (e.g., planets, asteroids, comets) explaining how these properties resulted from the objects' positions in the solar nebula during formation, and their future evolution. Learn how to visually discern planets from stars.
- Determine the properties of stars and galaxies, calculate the distances to astronomical objects, and describe the methods of discovering an exoplanet utilizing the properties of light.
- Describe the observational basis for current models of the origin, structure, and evolution of the Universe.
- Understand the mechanics/types of telescopes, how to use a telescope, and shopping criteria.

Course Schedule (Tuesdays; July 22nd, 29th, August 5th, 12th, 19th, 26th; 1:30 pm to 3:30 pm):

Week 1: Introduction: Branches of Astronomy; Methods to view the Night Sky (and how to orient yourself), Cycles of Moon and Sun, Eclipses of the Sun and Moon. History of Astronomy: Ancient Times, Renaissance Era – Galileo, Newton; Modern Era – Einstein, Sagan.

Week 2: Instruments of Astronomy: Radiation, Light Waves; Telescopes (how to use) – Optical, Radio, UV. The Sun: Solar Science, Sun's Atmosphere and Structure, Solar Activity and Sunspots.

Week 3: Solar System. The Planets: Terrestrial (inner) and Outer; Origin of the Solar System, Earth; Asteroids, Comets, Meteors, the Kuiper Belt and Oort Cloud.

Week 4: Stars – Stellar Astronomy: Star Distance and Luminosity, Classification and Structure; Star Birth-Evolution-Decline-Death.

Week 5: Galaxies: Milky Way Galaxy, Galactic Properties and Structure; Galactic Classification and Evolution. Cosmology: "Big Bang" Theory, Structure of the Universe, Dark Matter/Energy.

Week 6: Life beyond Earth (prospects?), Ethno/Archaeo Astronomy, Student Chosen Topics.

Night-time stargazing may be at the main campus (or other locations - Fisher Basin Park or BG), weather permitting, to help reinforce concepts learned in class.

Selected Bibliography/Resources (optional – not required):

● Astro3, https://www.amazon.com/Online-Printed-Access-Engaging-Titles/dp/1337097500

Class Evaluation: Class evaluations are sent by email. Sometimes the email will be delivered to your "junk mail," but we can assure you it's from Clark College only. Your responses are completely anonymous. If you do not see your evaluation immediately after class, look in your junk mail and send it to your email address. If you do not receive an evaluation, please call 360.992.2939.

Inclement Weather:

If the College cancels due to icy conditions you can find this on the college website: www.clark.edu ~ If Community Education concludes that the weather is too hazardous, we may also decide to cancel this class. In that case you will receive both a phone call and email. Make certain that we have your correct contact information by viewing the class roster.

Looking for classes? Visit our Community Education webpage: www.clark.edu/cce/