

Dear Students,

We are very pleased you will be joining us for our online version of the Summer Astronomy class at the University of Massachusetts at Amherst. The class you will be taking, *Modern Astronomy: Observing the Physics of Our Mysterious Universe*, will focus on current hot topics in astronomy while presenting a survey of the field at large. We will discover how the advent of modern technologies over the past century has completely changed our perspective of our role in the Universe.

During the three-week summer course, we will explore the night sky and the laboratory, assembling a full astronomer's toolbox to interpret our Universe. We will use daily interactive lab sessions to teach you the basics of computer programming, and how modern astronomers use it. You will create and utilize Python-based computer programs to increase awareness and intuition of the underlying astrophysics, and see how astronomers use these skills to advance our understanding of the universe around us. You will calibrate, reduce, and analyze real astronomical data taken with the Amherst College and Smith College telescopes with Python as part of the final project to address a scientific question. *No prior Python experience is necessary.*

We will learn to navigate the night sky in ways that are rewarding, fun, and educational. There are no required textbooks. Due to the online nature of the course, you will need access to a computer with a webcam and the free software listed in the syllabus. Please make sure to download the required software before the course starts so we can dive right into the astronomy!

Throughout the program, materials will be posted on the course website. Have a look before the program to learn about the course instructors!

<https://people.umass.edu/sbetti/summer2020>

Lastly, we want to ensure that this course addresses the topics in astronomy that interest you, and explores the questions that you want answered. Before you arrive, feel free to send us an email (sbetti@umass.edu) about any questions you have (including setting up the required software) or what you're most interested about in astronomy!

We look forward to seeing you!

Prof. Daniela Calzetti and Sarah Betti, organizers UMass Department of Astronomy