

Learn to Sail by the Stars...



Celestial Navigation Classes & Workshops, Mystic Seaport, Fall 2015

- **Sextants and the Noon Sun**, Sep. 26, 10:00am - 4:00pm:
Learn how to buy, use, and adjust sextants, the principal tool of celestial navigation. We'll also shoot and work Noon Sun sights to determine latitude anywhere on the globe.
- **Celestial Navigation: 19th Century Methods**, Oct. 3-4, 10:00am - 4:00pm:
A workshop in the history and the actual techniques of celestial navigation as it was practiced aboard American sailing vessels in the Age of Sail. How to use and adjust sextants and shoot the Sun for latitude and longitude. Details of actual historical calculations from the whaleship *Charles W. Morgan*, made practical for modern use.
- **Lunars: Finding Longitude by Observing the Moon**, Oct. 17-18, 10:00am - 4:00pm:
Lunars were once the epitome of navigation. In this intermediate-level class, we'll learn how to shoot lunars with modern sextants and how to "clear" them using historical and modern methods. And we'll see how they fit into maritime history from James Cook to Joshua Slocum and even interplanetary navigation.
- **Modern Celestial Navigation**, Oct. 24-25, 10:00am - 4:00pm:
Celestial for the 21st century navigator: a fast-paced introduction to celestial navigation from a modern perspective. How to use and adjust modern sextants and take Sun and star sights to validate GPS or sail in blissful non-electronic independence.
- **Sundials: It's All About Time**, Oct. 31, 10:00am - 4:00pm:
Build your own sundial as we learn about time in all its variations. We'll learn about mean time and apparent time, saving time and leap seconds, standard time and time zones. Everything you ever wanted to know about time!
- **Easy Astro Photos**, Nov. 21, 10:00am - 4:00pm:
Take amazing photos of astronomical objects and sky phenomena from sunsets and rainbows to moon phases, earthshine, eclipses and more using a smartphone or basic digital camera, employing techniques from traditional celestial navigation.

Details at ReedNavigation.com. To register: call Mystic Seaport Reservations: 860.572.5322, press 1 at the prompt.

"As usual, Frank Reed was outstanding. He puts on a very practical and entertaining class."
— Bob M., celestial navigation enthusiast.

"A great opportunity to learn celestial navigation in an immersive environment under the guidance of a fantastic teacher, cartographer, and master navigator. Frank Reed's style integrates history, mechanics, observation, and the planetarium together to produce the best two-day course available, anywhere."
— Philip Sadler, Lecturer in Astronomy, Director Science Education, Harvard University.

All classes are taught by Frank Reed, an expert in all forms of celestial navigation and a gifted teacher. Frank Reed was recently an invited guest on Neil deGrasse Tyson's *StarTalkRadio*.