

Across the Cosmos October 2024: Europa Clipper to “Set Sail”

I first wrote about a possible mission to Europa for the Clergy Letter Project e-newsletter more than ten years ago,¹ and it’s exciting to see Europa Clipper finally come to fruition! Although its launch from Cape Canaveral will have to wait out Hurricane Milton, Europa Clipper is ready to “set sail” for a rendezvous with Jupiter’s moon in 2030.² The spacecraft will be powered by an extensive array of solar panels, not solar sails; however, the “set sail” metaphor seems appropriate for Europa Clipper’s main science goal: to determine whether there are places below the surface of this icy moon of Jupiter that could support life.

At least seven of my colleagues at the Planetary Science Institute (PSI) are involved with instruments that will help elucidate the nature of this fascinating world.³ PSI scientists and staff are providing their expertise to four of the nine instruments aboard the spacecraft: Mapping Imaging Spectrometer for Europa (MISE); Europa Thermal Emission Imaging System (E-THEMIS); Europa Ultraviolet Spectrograph (Europa-UVS); and Europa Imaging System (EIS).

MISE will map ices, salts, organics, and spots on Europa that might suggest habitability, and investigate how material is exchanged between the surface ice and subsurface ocean. E-THEMIS will seek activity like icy geysers in regions where Europa’s subsurface ocean may be near the surface. Whereas MISE and E-THEMIS operate at infrared wavelengths, Europa-UVS will focus on ultraviolet measurements that are particularly sensitive to detecting vapor plumes, and EIS will produce high-resolution color and stereoscopic visible light images of Europa, which will enable studies of geologic activity, surface elevations, and provide context for other instruments.

I started this month’s column by referencing another column I wrote for the CLP e-newsletter in 2013. By my count, I’ve written 129 columns to date – enough material to provide a bit of a historic look at how some of the topics addressed have developed over the last decade. My thanks to Michael for preserving them in an archive! Hopefully, six years from now I’ll be able to relay some of Europa Clipper’s anticipated exciting results.

Finally, those of you who have used the *Zooniverse* platform for people-powered research may be interested to know that *Zooniverse* has updated some of its features, including, among other things, a new way to create and share group goals.⁴ This was one of the features requested by some of the faith communities I’ve engaged in *Zooniverse* projects, and it’s wonderful to see it implemented!

Until next month,

¹ <https://www.theclergyletterproject.org/pdf/abnews82013.pdf>

² <https://science.nasa.gov/mission/europa-clipper/>

³ <https://www.psi.edu/blog/meet-the-psi-scientists-powering-europa-clipper/>

⁴ <https://blog.zooniverse.org/2024/09/10/coming-soon-freshening-up-the-zooniverse-homepage/>

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