**Are oceans a myth? The first search for the presence of a surface ocean on a sub-Neptune.**

The search for habitable exoplanets, listed as a top science priority in the 2020 Astronomy Decadal Survey, is set to take off over the upcoming decade. So far, the focus of habitability has been on terrestrial planets which, even with JWST, require large investments of observing time to characterize. Recent theoretical work has proposed a new class of potentially habitable planets: Hycean worlds. These are water-rich sub-Neptunes with liquid surface oceans underneath a small -dominated atmosphere. The properties of Hycean planets make them easier to characterize with less observing time and greatly expand the region of parameter space which may be considered habitable. However, very little is known about the nature of these planets, if they exist in nature at all, as only one planet in the theorized Hycean regime has received any atmospheric observations. We propose to spectroscopically observe the Hycean-regime sub-Neptune K2-18b using JWST INSTRUMENT(s). The unique combination of wide spectral range and unprecedented precision will enable us to probe for the presence of a surface ocean on K2-18b via its influence on the atmospheric composition. These observations will make the first ever inference of the presence of a surface on a sub-Neptune planet. This measurement will be the first ever test of whether Hycean planets are real or fiction, and provide a novel, in-depth characterization of one’s atmosphere. Our results will transform conceptions of habitability in the Galaxy and inform observational strategies in the upcoming JWST era.