

ICTS Skype Seminar

Title : On the habitability of worlds within and outside our Solar system

Speaker : Manasvi Lingam, Harvard University, USA

Date : Tuesday, September 4, 2018

Time : 9:00 AM

Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore

Abstract : I will outline the development of astrobiology over the past decade and describe how it may evolve in the future. As this area is inherently broad, I will focus on a select few topics that I have worked on, which pertain to worlds of current interest, both inside and outside our Solar system. I will outline how the prebiotic synthesis of biomolecules may have been facilitated by solar flares on early Mars and Earth. On the other hand, I will describe how large superflares may potentially trigger mass extinctions on Earth (and other habitable planets). Subsequently, I will discuss putative biospheres on ocean worlds like Europa and Enceladus and some of the constraints imposed by the availability of nutrients and energy sources. Lastly, I will discuss how multiple factors combine to suppress the habitability of planets orbiting M-dwarfs, which have the longest stellar lifetime and are the most common in the Universe.