

IAF/IAA SPACE LIFE SCIENCES SYMPOSIUM (A1)
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NASA GENELAB TOAST-ETA ASTROBOTANY EDUCATION AND CITIZEN SCIENCE RESOURCE

Abstract

The NASA GeneLab repository is a treasure trove of ‘omics-level data that helps reveal how life adapts to various aspects of the spaceflight environment. These open source data are not only invaluable to spaceflight life science researchers but are also potentially invaluable to teaching a new generation of students that are inspired by NASA and the exploration of outer space. We have developed the TOAST-ETA database (<http://toast.astrobotany.com/>) in order to collate the plant biology portion of the GeneLab repository for intensive analysis by spaceflight researchers who are experts in the field and to make performing these kinds of analyses available to researchers, students and citizen scientists that are not formally trained bioinformaticians. TOAST-ETA provides an interactive graphical interface allowing exploration of transcriptomics data deposited in GeneLab and is supplemented by datasets imported from other research repositories. It is also supplemented by resources on <http://astrobotany.com>, a site that explores all of spaceflight plant biology, from its history, to current research tools, making the area more accessible as a whole. Results from this testing will be presented.