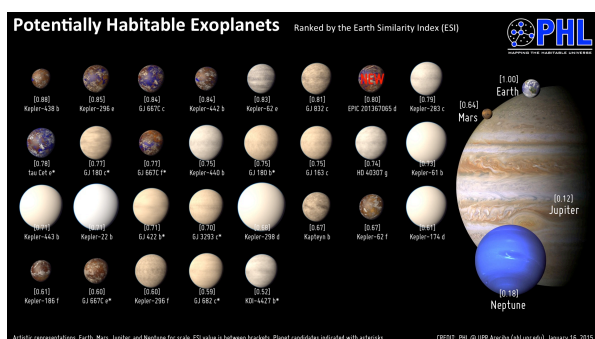


**THE HABITABLE EXOPLANETS CATALOG.** Abel Méndez, Planetary Habitability Laboratory, University of Puerto Rico at Arecibo, Arecibo, PR 00613 (abel.mendez@upr.edu).

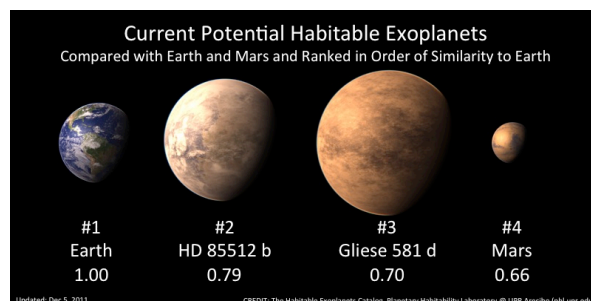
**Introduction:** The Habitable Exoplanets Catalog (HEC) is an online database of potentially habitable world discoveries for scientists, educators, and the general public [1]. The catalog uses different original methods to classify and compare exoplanets discoveries, specially those considered potentially habitable. The catalog is maintained by the Planetary Habitability Laboratory (PHL) @ UPR Arecibo ([phl.upr.edu](http://phl.upr.edu)), a minority serving institution. The HEC was established on December 2011, originally developed as resource only for scientists, but quickly evolved as a portal for educators and the general public. Today, the HEC is used internationally as the main reference on potentially habitable world discoveries by astronomers around the world (Fig. 1).



**Fig. 1.** Current potentially habitable exoplanets listed in the HEC. Most of them are larger than Earth and we are not certain about their composition and habitability. The catalog is updated as new data is available. Earth, Mars, Jupiter, and Neptune are shown for scale on the right.

**History:** The original idea for the HEC came on September 2011 as part of our research on potentially habitable exoplanets [2]. At that time there were only two confirmed potentially habitable exoplanets but many more were waiting for confirmation (Fig. 2). Our original intention was just to create a table to keep track of these discoveries for our own use. We immediately recognized the appealing of this table for educators and the general public too. So we decided to create simple artistic images to accompany the tables. Luckily, we already had developed by that time a software to render photorealistic images of Earth's past (the Visible Paleo-Earth, a previous project of the PHL) that we expanded to create exoplanet images. The catalog was launched online on December 5, 2011 during the NASA First Kepler Science Conference. We received over 100k visitors on launch day alone. Currently, we receive between 20k to 30k visitors per month. However, it is not uncommon to receive over

50k visitors a day during new exoplanet announcements. We keep improving the online presence of the catalog thanks to the suggestions and work of our scientific collaborators, the general scientific community, and many users.



**Fig. 2.** Original main image of the HEC on its online launch on December 2011. It was later determined that the planet HD 85512 b was too hot for life and Gliese 581 d was not a real planet detection.

**Current Status and Plans:** The scientific, education, and general public community have been using the HEC extensively since its introduction more than three years ago. The HEC have been highlighted in over a hundred news media outlets including major ones. Data from the catalog have been used to create online tools and mobile Apps. Scientist are using and citing the catalog in their research papers. It is now referenced in some general and academic textbooks. We are planning to translate to other languages some parts of the catalog, specially in Spanish. We are working with museums to highlight the catalog to their visitors. The online visibility of HEC has been key to promote our scientific research and establish research and commercial relationships. Our research also provided many research experiences to students from UPR Arecibo and other institutions. We still need to collaborate with more scientists and students from other minority serving institutions. In this presentation we will discuss the current results of the HEC project, its accomplishments, and how the participation of minority serving institutions can impact its development.

**References:** [1] Habitable Exoplanets Catalog ([phl.upr.edu/hec](http://phl.upr.edu/hec)). [2] Schulze-Makuch, D., Méndez, A., Fairén, A. G., *et al.* (2011), *Astrobiology*, 11, 1041.

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