

STUDYING THE FORMATION OF TERRESTRIAL EXOPLANET IN HABITABLE ZONE REGIONS OF BINARY SYSTEMS.

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Introduction

Large numbers of exoplanets are discovered every day and the natural question that arises is with respect to the habitability of these new planetary systems. About it, one very important point to note that the habitability of a planet in a system of binary stars depends on numerous factors, in which each star will play a different role in determining the ZH [1]. In this context, the main idea of this work is to carry out the analysis of planetary systems, which orbit binary stars through computational modeling and to build a database with possible candidates in ZH

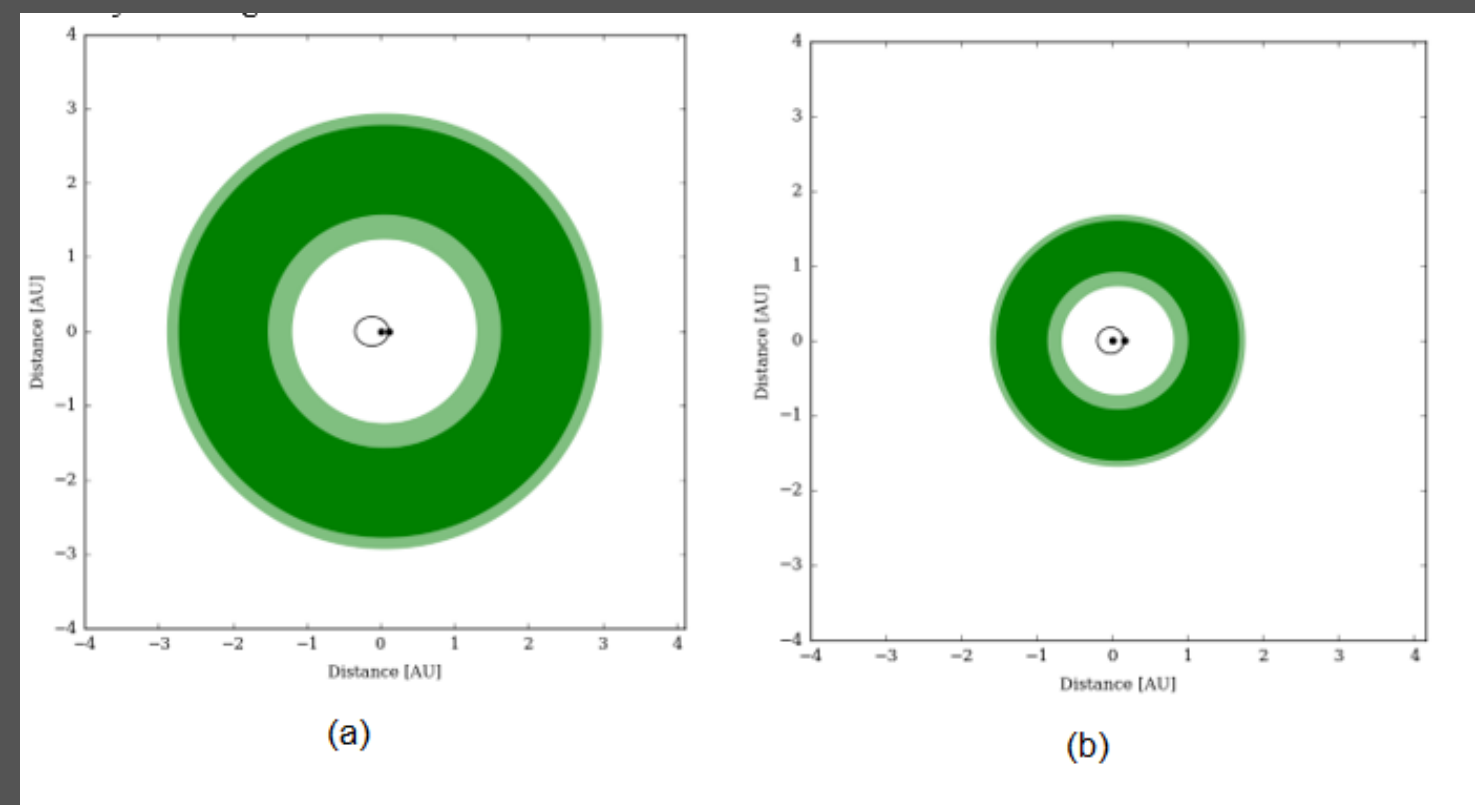
Methodology

For this work we will use a generalization of the HZ calculation for multiple star systems that corresponds to the final formula [2-3]:

$$\frac{L_s}{l_{in-Sun}} \leq \frac{\sum_{i=1}^N W_i(T_{star}) \left(\frac{L_i}{L_s}\right)}{d_i^2} \geq \frac{L_s}{l_{out-Sun}^2}$$

Thus, based on the general HZ formula for multiple systems, two systems of interest were initially chosen, Kepler-34 and Kepler-35. Subsequently, the site was used Habitable Zone in Multiple Star Systems (<http://astro.twam.info/hz/>). A graph was generated representing the habitability zone of Kepler34 e Kepler-35. The results will be compared in the future with data developed by the Rebound software [4- 5].

Results and Discussion



.Fig. (a) is the graph representing the HZ of the Kepler-34 system. Fig. (b) is the graph representing the HZ of the Kepler-35 system. we will use the distance information in AU over the HZ of the system in the rebound software later.

Conclusions

In future expected to obtain data on the structural composition of the systems of interest, in 5th Planetary Data and PSIDA 2021 (LPI Contrib. No. 2549) 7056.pdf order to produce informational data that make it possible to understand the origin, formation and evolution of these planetary systems, mainly, on terrestrial planets in regions of the Habitability Zone of binary systems.

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