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P01 - Optimal Site Selection for Sidewalk Astronomy at Maragondon, Cavite using Multicriteria Decision Analysis

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Sidewalk astronomy is a public-oriented scientific activity that aims increase public's awareness, understanding and appreciation of astronomy. However, to achieve this goal, organizers of sidewalk astronomy must be able to consider several factors to maximize the learning experience of the public. In this study, light pollution, site area, sightlines, terrain, and accessibility were identified as the key criteria in selecting optimal site for conducting sidewalk astronomy at Maragondon, Cavite, a third-class municipality in Cavite that approximately 60 kilometers away from Metro Manila. These criteria were ranked by sidewalk astronomy organizers as validators based on their importance in conducting sidewalk astronomy. A research instrument was also validated to assess the status for qualitative criteria, namely: sightlines and accessibility. Ten sites were pre-selected at Maragondon, Cavite where sidewalk astronomy activities could possibly be conducted. The qualitative and quantitative data obtained from the five key criteria from these sites were subjected to normalization and multicriteria decision analysis (MCDA) through simple additive weighting (SAW) to determine the optimal site at Maragondon, Cavite. Consequently, the MCDA was able to identify the optimal site given that the five criteria have conflicting objective. The analysis identified that areas further from urban centers, given that they have low levels of light pollution, larger site area, clearer sightlines and flatter terrain could be marked as the optimal site for conducting sidewalk astronomy activities. In the future, this study aims to create a baseline data to determine the most optimal site in the larger research locale.

Primary author: Mr MARIÑAS, Marion Rodrigo III (Cavite State University Naic)

Presenter: Mr MARIÑAS, Marion Rodrigo III (Cavite State University Naic)

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