

ABSTRACT ONLY**PROTOPLANET EXPRESS, A VIDEO GAME
BASED ON HYDRODYNAMICAL
SIMULATIONS**J. Cuadra^{1,2}, M. Vergara³, B. Escárate¹,
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High-resolution observations obtained during the last decade show that protoplanetary discs can be very complex objects. Rather than uniform discs, we see that they have large cavities, spiral arms, rings, gaps, and asymmetries. To understand these features, astrophysicists many times have to develop numerical simulations, in which planets or unseen stellar companions are added to reproduce the observed morphologies. While the spectacular observed images are popular in mainstream media, the simulation side is rarely known by the general public.

We have created “Protoplanet express”, a video game in which the user visits different known protoplanetary discs, which are rendered in 3D from actual hydrodynamical simulations. The user will encounter in the models the same features observed with ALMA and other telescopes, and their goal will be to find the reason for each of them. For example, the user completes a level once they find the planet causing an observable gap in the disc.

Please find a copy of the poster at https://jrcuadra.github.io/plaga/larim_ppe/ and a related article at <https://arxiv.org/abs/2303.17654>. The game is available at https://store.steampowered.com/app/2601120/Protoplanet_Express/.

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