ID de Contribución: **47** Tipo: **sin especificar**

# Candidate Gravitationally Lensed Submillimeter Galaxies in Herschel-ATLAS Associated with WISE Elliptical Counterparts

*viernes, 20 de junio de 2025 13:45 (15 actas)*

We present a new and independent methodology to identify gravitational lens candidates using data from the H-ATLAS and AllWISE surveys. Unlike previous approaches, which are typically biased toward bright, strongly lensed submillimeter galaxies (SMGs), our method targets fainter systems with lower magnifications. This enables the identification and individual study of lensing events that would otherwise only be accessible through statistical weak lensing analyses. Our approach focuses on high-redshift SMGs from H-ATLAS in the range $1.2 < z < 4.0$, and searches for associated AllWISE sources within an angular distance of 18 arcseconds. Candidate lenses are selected based on their WISE colors ($0.5 < W2-W3 < 1.5$ mag), consistent with those of elliptical galaxies, and further filtered using $J - W1$ color and photometric redshift to reduce stellar contamination. This conservative selection yields 68 new lens candidates. We then performed SED fitting with CIGALE across UV to sub-mm wavelengths to estimate the physical properties of both the lenses and the background SMGs, and to assess the lensing nature of these candidates. Despite uncertainties, we constrained key parameters such as stellar and dust masses, infrared luminosities, and SFRs. In addition, the estimated magnifications for most candidates are modest, consistent with the weak lensing regime ($\mu \simeq 1$–$1.5$), although a few sources may require further modeling. Future efforts could refine this methodology to recover additional candidates outside our selection, and high-resolution follow-up observations will be essential to confirm the lensing nature of these sources and to further investigate their physical properties.

**Autor:** CANO DÍEZ, Juan Alberto (University of Oviedo)

**Coautores:** GONZÁLEZ-NUEVO, Joaquín (ICTEA/Universidad de Oviedo); BONAVERA, Laura (ICTEA - universidad de Oviedo); MUÑIZ CUELI, Marcos (SISSA); Sr. BAKX, Tom (Chalmers University of Technology, Nagoya University); CASAS, José Manuel (Universidad de Oviedo); CRESPO IGLESIAS, David (Universidad de Oviedo); FERNÁNDEZ FERNÁNDEZ, Rebeca (Universidad de Oviedo, ICTEA)

**Presentador:** CANO DÍEZ, Juan Alberto (University of Oviedo)

**Clasificación de la sesión:** Sesión ICTEA

**Clasificación de temas:** MOMA