Optical follow-up of Planck's Sunyaev-Zeldovich cluster sample

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One of the important results of the Plank mission is the new all-sky cluster survey and the most extensive catalogue of the galaxy clusters candidates detected by means of the Sunyaev-Zeldovich effect. We are carrying out the optical imaging and spectroscopic follow-up campaign of 366 SZ clusters candidates using 6 telescopes located on the Canary Islands. The aim of this study is to confirm these detections through optical photometry/spectroscopy. **The present status of this project is**: 100 clusters confirmed, 38 of them with spectroscopic redshifts and 12 with velocity dispersions.

WHY?

These galaxy clusters will provide rich statistics for cosmology and can significantly improve dark energy constraints. Properties of the galaxy population (magnitudes, colors, recession velocities) incorporated with various biases and uncertainties into detailed, large-volume simulations provide better quantification of systematic errors and estimation of cluster mass. Thus, allow for better cosmological constraints from cluster surveys, which are currently limited by systematic uncertainties in the cluster mass calibration.