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The OTELO Survey.

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Abstract

OTELO is an ultradeep, 2D-spectroscopic (R∼700) blind survey, defined on a window of 210Å, centred at 9175Å, targeting a region of the Extended Groth Field that is embedded in the Deep field 3 of the Canada-France-Hawaii Telescope Legacy Survey (CFHTLS). Is the deepest pointing of GALEX in imaging and spectroscopy. Such Pseudo-spectra(PS) were obtained using the red Tunable Filter (RTF) of the OSIRIS instrument at GTC. OTELO detects emission lines with a limiting flux of 5×10^{-19} erg/s/cm^2 and observed equivalent widths (EW)≥5Å. Besides, OTELO is targeting low mass galaxies, down to $M_* \sim 10^6 M_\odot$. As reference, the MUSE Hubble Ultra Deep Field barely reach down to $M_* \sim 10^8 M_\odot$ in few cases, and only at redshifts below 0.4, and none at redshifts above ~ 0.7. However, OTELO detects the bulk of emitters around $10^8 - 10^9 M_\odot$ even at redshifts as high as 1.4, reaching down to $10^7 M_\odot$ at redshift 0.4. Then, OTELO reaches stellar masses one order of magnitude lower than MUSE Hubble Ultra Deep Field. We were able to generate a catalogue of 60[OII] emitters at $< z >= 1.43$. The 93% of those have masses in the range of $10^8 < M_*/M_\odot < 10^9$, classified as late-type galaxies. From [OII] emitters we generated the Luminosity Function, sampling it down to ~ 1 dex lower than in previous works. Taking into account the results obtained for the lines H_α, H_β and [OII], we were able to study the star formation rate, star formation rate density, and number density and the evolution of those parameters between $z \sim 0.4$ and 1.43. We obtained a robust estimate of the specific star formation rate stellar mass relation based on the lowest mass sample published so far. We also determine a flat trend of the star formation rate density and number density with redshift.

My poster is available at https://zenodo.org/record/7033260#.Y8RTHuzP10t