

e-Merlin and the e-MERGE Star-formation Survey

e-MERGE is an ambitious Legacy survey to exploit e-MERLIN's unique combination of sensitivity and spatial resolution to study the formation and evolution of star-forming galaxies and AGN out to redshifts of $z > 5$. These observations will provide a powerful, obscuration-independent tool for measuring the massive star formation and AGN activity in high-redshift galaxies, hence tracing the development of the stellar populations and the black hole growth in the first massive galaxies. With a resolution of 50-200 mas in C- and L-Bands, corresponding to < 0.5 -1.5kpc at $z > 1$, e-MERLIN gives us our first truly reliable view of the distribution of star-formation within typical galaxies at the epoch where the bulk of the stars in the present-day Universe were being formed. e-MERLIN will disentangle the relative contributions of AGN and star-formation, an essential step given the apparently simultaneous growth of the black holes and stellar populations in galaxies. e-MERGE will also statistically characterize the nature of the sub- μ Jy radio population which are the target objects for the SKA.

I will be presenting updated reworking and imaging from the original MERLIN+VLA L-Band study of HDF-N, together with results from recent e-MERLIN commissioning observations for e-MERGE which have been used for both initial e-MERGE science and to verify the observational parameter space of the instrument.

Tom Muxlow

and the e-MERGE consortium