

Dynamics and flows in the complex massive star forming region W33A

- Luke Maud

Combining ALMA high resolution ALMA observations with detailed 3D radiative transfer models has allowed us to understand the complex dynamics of the clustered massive star forming region W33A. Once thought to harbour a massive dominant source with a 1000au disc, W33A, is seen to fragment down to multiple cores joined by gas and dust filamentary structures. I will present our recent ALMA observations, in combination with detailed 3D RT models, indicating the flow of material from the larger scales into the cluster of cores and between the cores themselves. W33A is shown to be fed from a large scale environment by an arc/spiral shaped filaments and the intra-core filaments 'trace the flows' between the cores and continue to funnel material to the main massive protostar dominating the region. Only with high spatial resolutions ($\lesssim 1000$ au scales) and complex RT codes can we begin to really understand what were once thought to be 'simple' single massive protostar.

Other