Galactic Mergers at redshift $z \sim 5$, a sample of fast growing QSOs

Nathen Nguyen

Departamento de Astronomía, Universidad de Chile, Camino el Observatorio 1515,
Las Condes, Santiago, Casilla 36-D, Chile

Abstract. In order to construct accurate Galaxy Evolution models, a more thorough understanding of the high SFRs seen at $z > 2$ is needed. To better understand AGNs at higher redshifts, we have conducted a multi-wavelength of 38 of the most luminous AGNs found in the SDSS catalogue at redshift $z \sim 4.8$, powered by fast-growing supermassive black holes (SMBHs). Using Herschel/SPIRE observations, we found star formation rates (SFRs) of up to 4000 Solar masses per year. We believe that both the AGN and star formation of these objects are fed by a common reservoir of cold gas, and that this cold gas is due to in-falling matter from major mergers. In this talk, we present ALMA band-7 data of the [CII] $\lambda 157.74$ m emission line and underlying far-infrared (FIR) continuum of twelve luminous quasars at $z \sim 4.8$ in our search for dynamically interacting companions.

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