X56a RIOJA: Optical and Far-Infrared View of a Major Merger at z = 7.15

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Combinations of JWST infrared and ALMA submillimeter observations allow us to investigate a multi-phase structure of high-redshift galaxies. The Reionization and the ISM/Stellar Origins with JWST and ALMA (RIOJA) is a JWST GO Cycle 1 program targeting bright [OIII]88+[CII]158 μm emitters at $z > 6$ with NIRCam and NIRSpec IFU to establish relations between stellar, gaseous, and dusty properties of the high-redshift galaxies. In this talk, we would like to present results of our NIRCam observations targeting B14-65666 (a.k.a. Big Three Dragons), a bright major merger at z = 7.15. The NIRCam images clearly revealed detailed morphology of the two merging clumps in mid-infrared wavelengths in the observed frame. A merging clump is accompanied with diffuse emission around it, indicating large tidal tails at this high redshift. The F444W photometry shows excesses in both merging clumps being caused by a strong [OIII] 5007 emission line, which support that it is experiencing instant starburst caused by the major merging event. We will discuss results of the SED fitting and a comparison with ALMA observations of emission lines and underlying dust continua.