



New Surprises in Extragalactic Astronomy from JWST, a Personal Account

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JWST's unmatched sensitivity across the full range of infrared wavelengths, with unprecedented spatial resolution, is revolutionizing every area of astronomy in its first year--as we expected. I will present a personally biased list of several JWST surprises in extragalactic astronomy that most of us did NOT predict. I'll start with unexpected results on galaxies JWST is finding at very high redshifts, including how and where they rapidly formed stars, metals and dust, and re-ionized the Universe. Then I'll discuss JWST observations of nearby active galactic nuclei. We may have missed a lot of them previously due to their amazingly heavy dust obscuration. Close-up views are suggesting that the high-speed gas outflows they launch may not always be simple two-sided jets. And some of our ideas about how their outflows might have shut down star formation--known as "AGN feedback"--may also need revision. In fact, we may have to re-think some of our ideas about what a 'galaxy' and an 'AGN' actually are. While trying to answer these questions, we should look at the incredible new data with open minds about what we thought we knew previously.