Extragalactic Surveys: Overview

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In addition to dark energy and exoplanet science, WFIRST will provide a unique and powerful platform for a broad range of compelling infrared survey science. Some of these studies will use the data acquired for the dark energy and exoplanet surveys. Other science will come from separate dedicated observations. Indeed, the Decadal Survey constructed WFIRST out of three separate missions with similar hardware but very different scientific goals. One of these missions, the Near-Infrared Sky Surveyor (NIRSS), emphasized the vast scientific potential of a space-based, wide-field infrared survey observatory for a broad suite of Galactic and extragalactic science, irregardless of its necessity for cosmological or microlensing investigations. I will discuss the extragalactic scientific potential of WFIRST, including its unprecedented ability to probe cosmic dawn by finding vast numbers of quasars at the earliest cosmic epochs and its unique capabilities for studying galaxy evolution. I will also present several strawman Guest Observer (GO) programs possible with WFIRST.