

## Celebrating 20 years of Swift Discoveries



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# The Growing Population of Radio-Detected Merger Driven GRBs: Their Environments, Jets, and Afterglows

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The launch of Swift revolutionized our understanding of merger driven/short duration GRBs, with the first broadband afterglow being detected shortly into Swift's life. The detection of an afterglow is imperative for understanding the burst's properties, with the radio band in particular providing key insight into the collimation and environment of the GRB. Despite the importance of the radio afterglow, the first decade of Swift's life resulted in only 5 radio-detected short GRBs, compared to over 70 short GRBs with X-ray detections. Thanks to the improved sensitivity of radio facilities and our recent campaign to probe a large sample of short GRBs in previously unexplored temporal regimes, we have more than tripled the number of detected radio afterglows in the second decade of Swift's life. In this talk, I will demonstrate how these radio detections, in conjunction with X-ray and optical afterglows from Swift and other observatories, reveal a diverse population of GRBs, with a focus on GRBs with non-standard radio afterglows. I will additionally take a holistic look at the properties of the radio detected population to determine how their afterglows, environments, and jets differ from the overall merger driven GRB population. I will conclude with how we can utilize the X-ray afterglow to inform our radio observations in order to increase the chance of detection.

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