## Searches for Transient Sources and Extraterrestrial Technologies with the European VLBI Network

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Our group is currently commissioning a commensal observing system for the European VLBI Network (EVN) that will permit parallel science pipelines to run alongside traditional correlation and imaging. These parallel pipelines could include fast / slow transient searches, searches for extraterrestrial intelligence (SETI) or other applications, and could operate on a variety of data products, including incoherent sums, closure quantities or raw voltages from individual stations.

We are initially concentrating on the development of a fast radio transient pipeline designed to investigate one of the most perplexing mysteries in astrophysics, so-called "fast radio bursts" (FRBS), impulsive events that last for only milliseconds but appear to be extraordinarily distant and energetic. At the present time around ten events of these events have been detected, but the source of these objects remains unclear. Theoretical speculation ranges from various massive object coalescence phenomena, anomalously dispersed galactic events to exotic disruptions caused by topological defects in the universe, while a strong contingent of astronomers hypothesize that these events might simply be some sort of extraordinarily pathological terrestrial interference. So far these events have only been detected with single dish telescopes, usually in archival data sets, and it has thus been difficult to accurately determine the detailed properties of these events. Distinguishing between possible progenitors will require more detections, more information about events (polarization, spectral index, higher time resolution) and better localization. Our commensal search for these events with the EVN offers an effective and efficient opportunity to detect more of these events, potentially helping to elucidate their source.

Here we will discuss motivating science applications and will present the technical design and deployment status of the EVN commensal observing system.