



**Paths to discovery in Radio Astronomy
the role of technical innovation and serendipity**

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One of the most important events in twentieth century astronomy was the birth of radio astronomy. This was our first view of the non-thermal universe, and our first unobscured view of the universe. Radio telescopes have followed the pattern of exponential growth generally seen in flourishing areas of science and technology, Moore's Law being one famous example. There is no technical reason for this exponential growth not to continue, but to do so will require innovation and shifts in technology. I will explore some of the paths which lead to these discoveries in radio astronomy to illustrate the roles played by serendipity and instrumental developments in the discovery process.

In any area of science the rate of new discoveries is highest after the inception of a new field and while this was certainly the case in radio astronomy completely new and unexpected discoveries are still being made. I will conclude with a discussion of the latest results on Fast Radio Bursts noting the parallels with the early discovery of extra-galactic radio sources and discussing the role played by innovative new technology.