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Solar Flare Observations by the Karl G. Jansky Very Large Array: A Survey YINGJIE LUO, New Jersey Inst of Tech — Solar flares are the most powerful energy release events in solar system and flare observations at multiple wavelengths provide us important information on not only physical properties of their source region in the solar atmosphere, but also the accompanying high-energy charged particles accelerated to nearly the speed of light. As high-energy electrons emit radio waves through a variety of emission mechanisms, radio observations serve as an excellent tool to study the origin and transport of the high-energy electrons at the flare site. TheKarl G. Jansky Very Large Array(VLA) is one of the worlds most advanced general-purpose radio observatories. It can observe the Sun with relatively large instantaneous bandwidths up to 2 GHz, more than 1000 frequency channels for simultaneous imaging and ultra-high time resolution of up to 50 milliseconds. Since 2011, we have recorded dozens of solar flares using the VLA. Here I report a survey of these VLA flare observations and put them into context with observations at other wavelengths including extreme ultraviolet (EUV) and X-rays. Examples of selected events will be shown to demonstrate some potential investigations on important science questions in solar flare studies made possible by the radio and complementary data.

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