

Pulsar Observation at 175 MHz using Gauribidanur Radio Telescope

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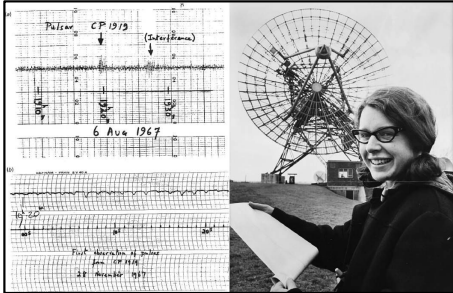


Figure 1: First ever discovered pulsar CP 1919 by Jocelyn Bell



Figure 2: Gauribidanur Diamond Array Telescope

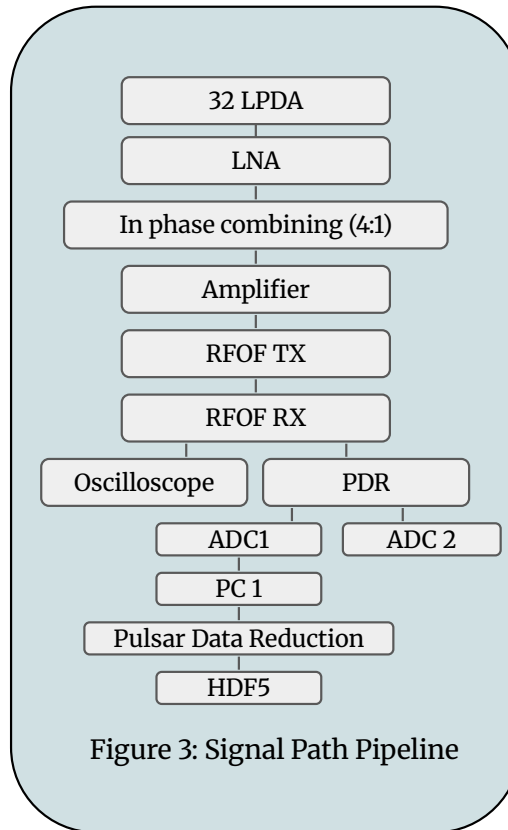


Figure 3: Signal Path Pipeline

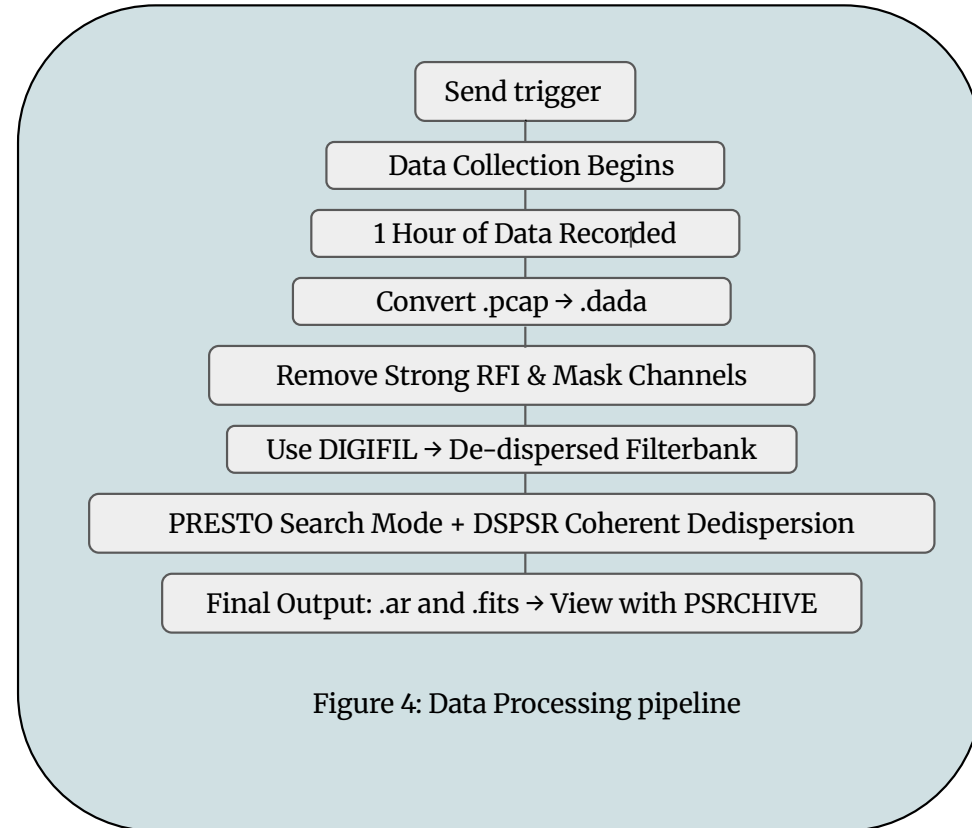
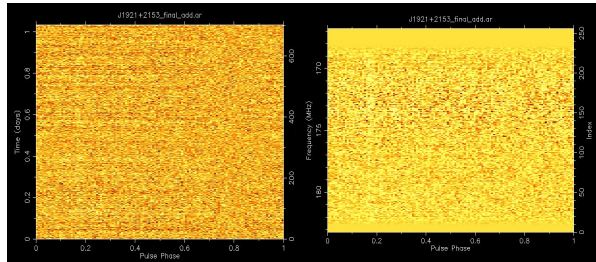
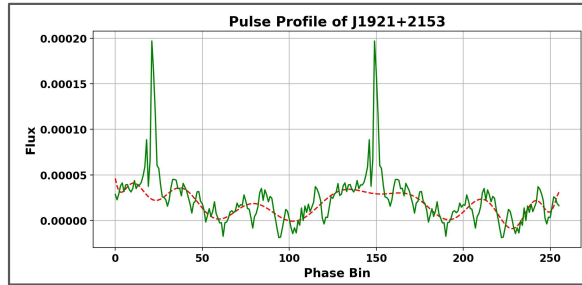
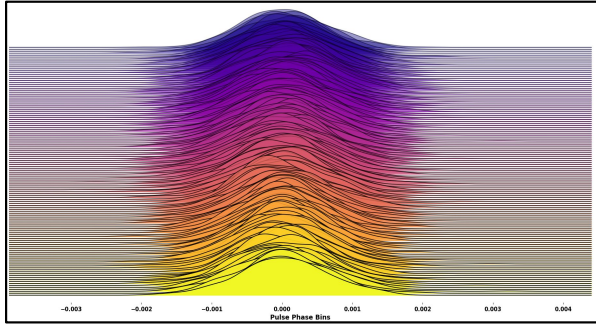


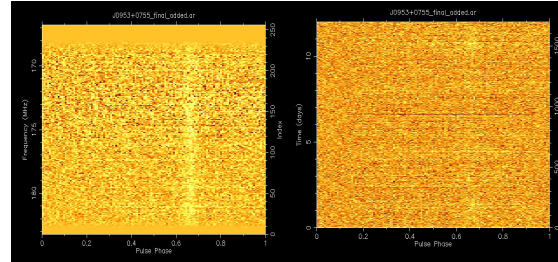
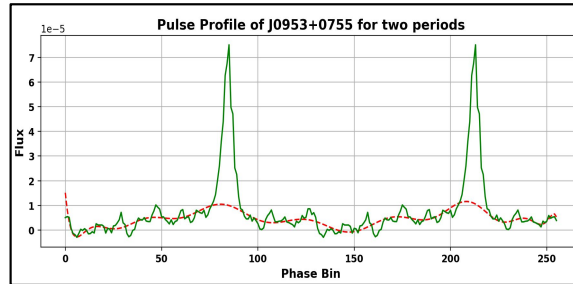
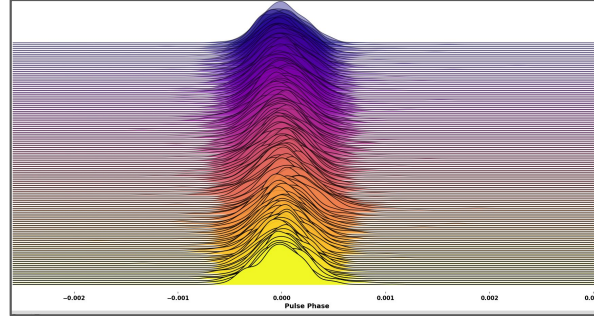
Figure 4: Data Processing pipeline

Joy Division plots and Added Profiles of three observed Pulsars

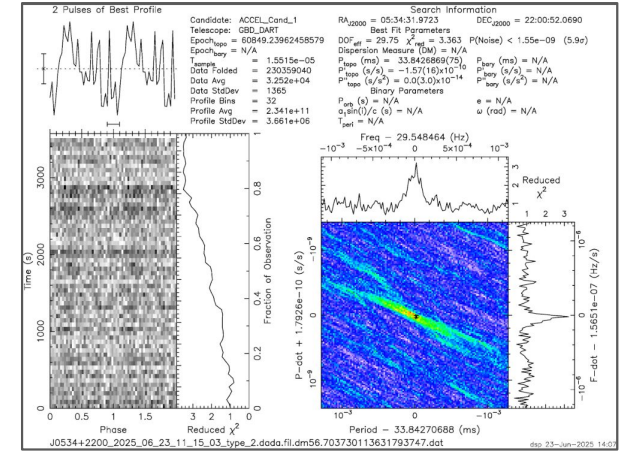
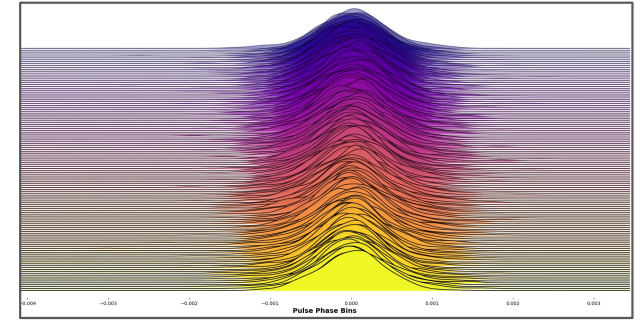
PSR J1921+2153



PSR J0953+0755



PSR J0534+2200



- Three plots in the top row 3 plots are Joy division plots of each pulsar
- The rest are stacked and folded profiles of the pulsar

Table 1: Parameters of the Pulsar

PSR Name	J1919+2153	J0953+0755	J0534+2200
SNR	8.5	25.5	5.0
Period(s)	1.337302160*	0.253089348	0.033842426
DM (pc/cm ⁻³)	12.4	2.94	56.77

CONCLUSION

- Successful detection of pulsar by planning observation and data processing
- The SNR obtained from the added pulse profile data is consistent with the expected value
- Pulse profile variations may reflect changes in the signal's path through space, like the interstellar medium or solar activity

CONTRIBUTIONS

- Developed a code for joy division plot and for stacking and removing baseline from added profiles