

Physics 343 Lecture # 7:
Fourier transforms; radio antennas

This week's schedule

On-call office hours:

Section A, C = Baker

Sections B, D, E, F, G = Deshpande

Regular office hours: Thursday = Deshpande, Friday = Baker.

Data for lab # 3 are being taken today and (for James, Viraj, David, Caryn, Philip) tomorrow, and will be emailed to you.

Lab # 3 due before 11:59pm on Monday 3/19, and can be submitted by email (PDF please; use “export to PDF” option to save in this format).

Data for Lab # 3

Data will be sent to all of you by email. A few hints:

- + data taken in mode 4: **1218.75 kHz bandwidth, 156 channels**
- + be aware of the difference between real emission and radio frequency interference: RFI tends to appear as **sharp, narrow spikes**, while true HI emission from the Milky Way tends to be **broader** in frequency \Leftrightarrow velocity
- + system temperature can vary with frequency
- + relationship between frequency, wavelength, and velocity intervals: $\Delta v/v = \Delta \lambda/\lambda = \Delta v/c$ (in terms of central λ , v)
- + please let me know if there are problems with the data!
(for future reference: we do need to specify **freq 1420.4 4** when working with the real telescope)

Quiz