Physics 343 Lecture # 3: statistics and radio astronomy

Scheduling

For analysis weeks, we will hold optional "on call" office hours at lab times in addition to regular office hours. This week:

Sections A, B, & C: Baker, Serin 309W

Sections D, E, F, & G: Wu, ARC 216

plus "regular" office hours Monday 3:30–4:30pm (Baker) and Thursday 5:00–6:00pm (Wu).

Next Monday:

+ lab report # 1 due (PDF by email before 11:59pm, or in class)

+ "hands-on" meetings for lab # 2 will begin

Another reminder: content of lab reports

Do include:

(1) a brief description of the purpose of the observations

(2) a brief description of the observations (e.g., what telescope, frequencuy, target? did you edit the data in any way?)

(3) a description of your analysis (number-crunching)

(4) a discussion of your results (plots and sketches help; consider your sources of uncertainty)

(5) a summary of your most important conclusions

Do not include:

(1) full scripts/programs used to obtain/analyze data

(2) the raw data themselves

Write in active voice ("We did..."), and be faithful to the data!

Errors: random and systematic

When we make a measurement, we do so imperfectly due to both random and systematic errors.

Random errors average away with more measurements. We often assume that these follow a Gaussian probability distribution (more on this later).

Systematic errors do not average away. Getting more data doesn't always help!