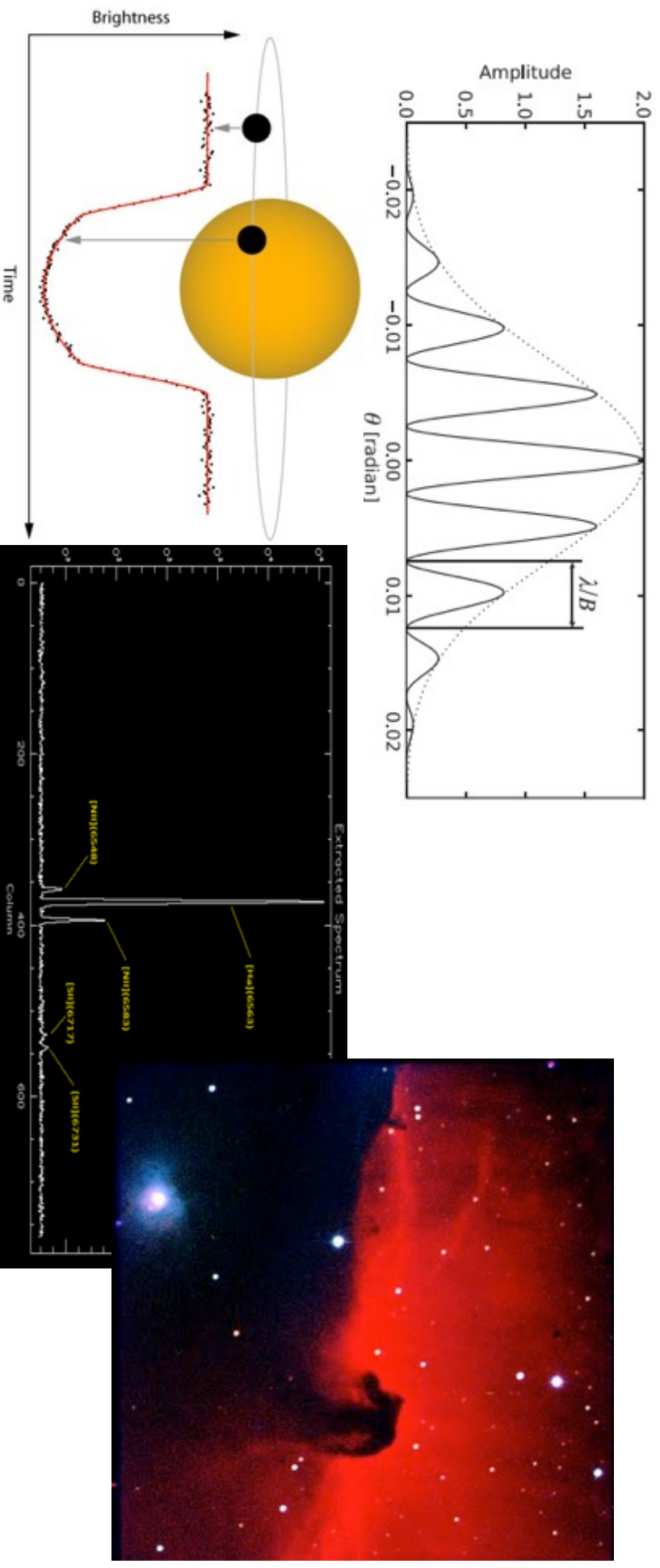


PHY 517 / AST 443: Observational Techniques in Astronomy

Anja von der Linden



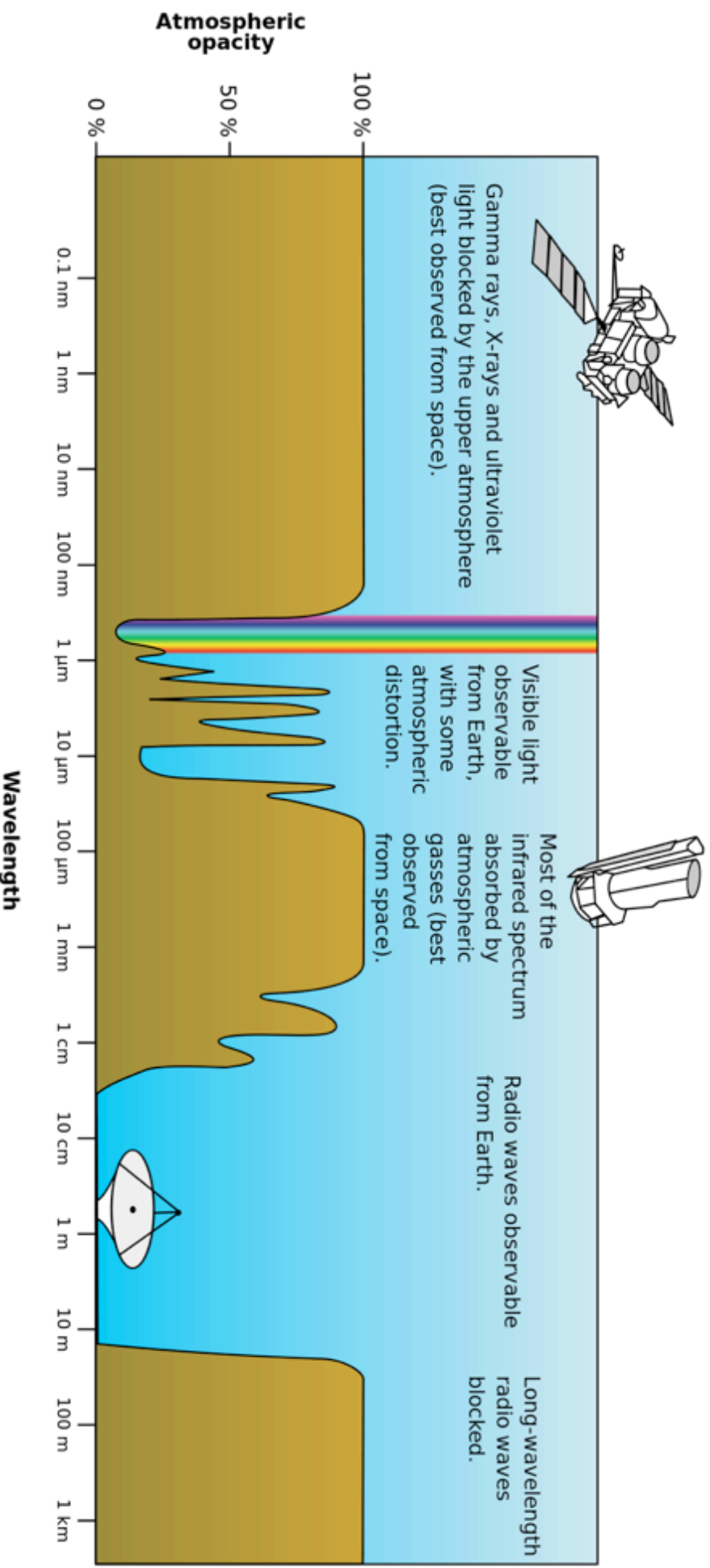
satisfies **Graduate Lab** requirement

“Experiments” in Astronomy

- you cannot influence or modify the source of your signal
- you can only **observe** your source / target
- your targets are usually far away → faint
- practical astronomy is much about optimizing observational techniques, data analysis methods, and statistical methods

What kind of astronomer are you?

- Astronomers use observations over entire electromagnetic spectrum + more (neutrinos, gravitational waves, meteorites)
- Class will focus on optical astronomy + radio interferometry



Mt Stony Brook Observatory

- roof-top dome + telescope (14-inch) + CCD camera + spectrograph



Radio interferometer

- custom-built at Stony Brook
- lab 3: measure diameter of the Sun



A Michelson-type radio interferometer for university education

Jin Koda, James Barrett, Gene Shafiq, Jeff Slechta, Tetsuo Hasegawa, Masahiko Hayashi, and Stanimir Metchev

Citation: *American Journal of Physics* **84**, 249 (2016); doi: 10.1119/1.4940212

The Fine Print

- class is currently full
- you should already know (some) programming and (some) statistics before you take the class
- the optical labs have to be done at night, with clear weather
 - you have to be prepared to schedule 2-6 night-time observing sessions, and have some flexibility for weather conditions