

Introduction to Infrared Astronomy

- Instructor: Alan Tokunaga, Astronomer Emeritus of the University of Hawaii
- My research activities have included studies of planetary atmospheres, comets, the interstellar medium, star formation, and instrumentation. I also was Director of the NASA Infrared Telescope Facility.
- This short course covers the basics of infrared astronomy. It is intended to help you find information you may need in your research. There will be 2 lectures per day for 3 days. Questions are encouraged, in and outside of class. My office number is 1115W.
- Presentations will be made available to everyone at <http://www.astron.s.u-tokyo.ac.jp/students/news-for-graduate/>
- It will include additional information in the Notes section of the PowerPoint slides.
- Grades will be based on take home test questions and class participation.

The lectures are based on the following book chapters:

- Tokunaga, A. T. (2000). Infrared Astronomy. Allen's Astrophysical Quantities, 4th edition. A. N. Cox. New York, Springer-Verlag: 143.

https://www.dropbox.com/s/a8caepozivqzqu3/Astrophysical_Quantities_chap7.pdf?dl=0

- Tokunaga, A. T., W. D. Vacca and E. T. Young (2013). Infrared Astronomy Fundamentals. Planets, Stars and Stellar Systems. T. D. Oswalt and H. E. Bond. Dordrecht, Springer Science+Business Media. **vol. 2, Astronomical Techniques, Software, and Data**: 99-174.

https://www.dropbox.com/s/p213gbt8bk5ewp1/Infrared_Astronomy_Fundamentals.pdf?dl=0



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 3. Background emission from the Ground
 4. Background Emission from Space
 5. Detection of Infrared Radiation
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 7. IR standards and Absolute Calibration
 8. Infrared Sky Surveys & Space Missions
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 12. Instrumentation - Selected Topics
 13. Future Space Missions