

AGA5802
Astrofísica Observacional

Prof. Jorge Meléndez

Tuesdays and Thursdays, 14:00 – 16:00

Sala P219

Start: March 14, 2023

End: June 22 or June 27, 2023

AGA5802

Astrofísica Observacional

Objectives (JANUS):

To teach the student basic principles on astronomical instrumentation, as well as on observing techniques, data acquisition and data reduction. The course should give the student the conditions to plan and use astronomical instrumentation to address diverse astronomical problems

Content

- Big Questions in Astronomy: decadal survey
- Coordinates. Planning observations
- Astrophysical information: photons and other messengers. Different aspects of the measurements.
- The effect of Earth's Atmosphere on astronomical observations
- Proposals for observing time
- Photometry and applications

Content

- Spectroscopy and applications. Single object and multi-object spectrographs. Echelle spectrographs
- Light collectors. Telescopes, active and adaptive optics
- Detectors
- Data acquisition and reduction. Errors
- Seminars: polarimetry, gamma-rays, x-rays, radio, and other topics

Training at 1.6m telescope (OPD)

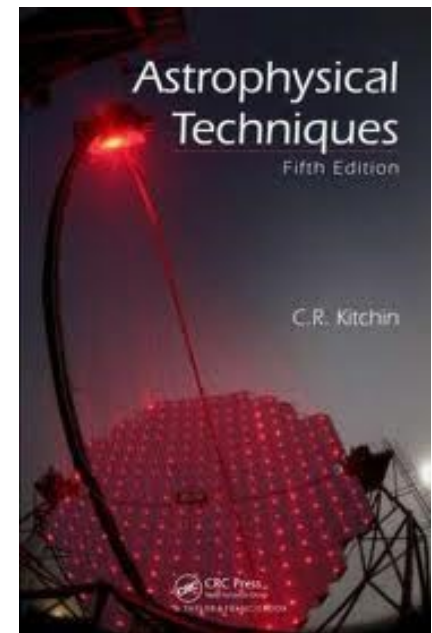
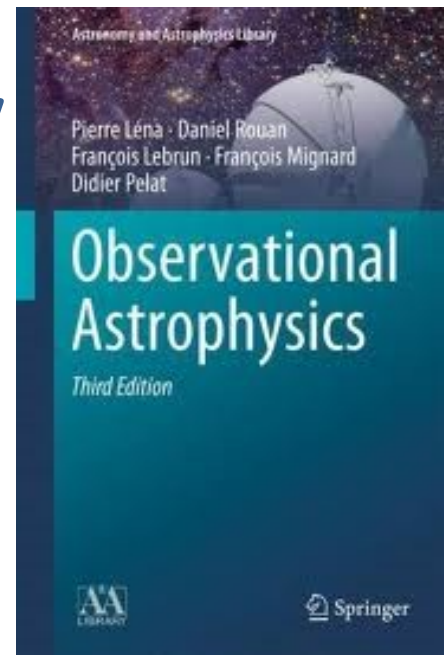
- LNA/OPD nights of April 28-May1 (Friday-Monday)
- Departure: 28/4 (Friday)
- Dinner at OPD is served 17h – 18h TBC
- Check-out Monday (May 2nd) 9am TBC
- Back to Sampa May 2nd (Tuesday)
- Spectroscopy with 1.6m telescope + imaging and photometry with 60cm IAG and perhaps polarimetry with 60cm Zeiss.

Main bibliography

- **Observational Astrophysics,**
3rd Ed., P. Lena et al., 2012
(2nd Ed. is OK)

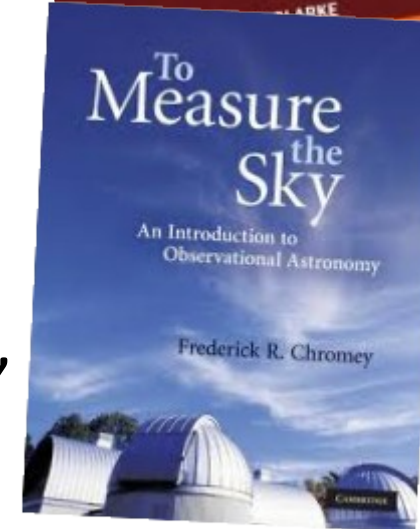
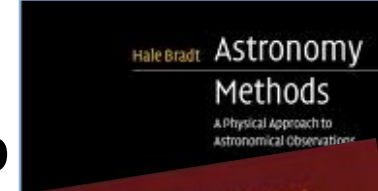
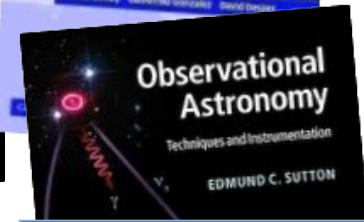
- **Astrophysical Techniques,**
4th, 5th, 6th or 7th Ed.

C. R. Kitchin, 2003-2008-2013-2020



Bibliography (others)

- **Observational Astronomy, 2nd Ed,**
D. S. Birney, G. Gonzalez, D. Oesper 2006
- **Observational Astronomy: Techniques and Instrumentation.** E. C. Sutton, 2011
- **Astronomy Methods. A Physical Approach to Astronomical Observations.** H. Bradt, 2004
- **Astronomy principles and practice, 4th Ed.,**
A.E. Roy & D. Clarke, 2003
- **To Measure the Sky.** F. R. Chromey, 2010
- **An Introduction to Observational Astrophysics,**
M. Gallaway, 2020



Lecture notes

www.astro.iag.usp.br/~jorge/aga5802/

I'll send you an email when the **updated** slides are posted to the website

Grading

- Only 1 major exam
- Quick tests (*provinhas*), proposal, homework, seminars, practical work (based on OPD data)

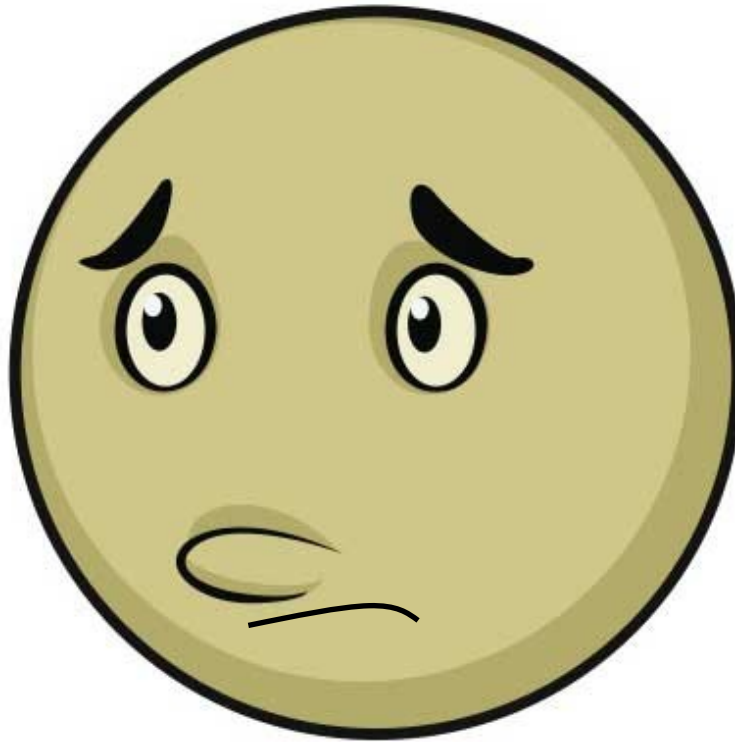
GRADE: OPD (30%), exam (25%), <homework> (15%), <provinhas> (10%), proposal (10%), <seminars> (10%)

- Frequency at least 70% (USP requirement)

You can use YOUR OWN notes on the tests

Deadlines

**Any work after the deadline will have
ZERO grading**



Plagiarism

Use your own writing!. If you have (part of) sentences copied from other works → grade ZERO

