Introduction to the astrophysical lab course

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Hygiene Rules

- **Compliance with the University-wide regulations.**
- **No admittance of people with flu-like symptoms to the seminar room and the telescope dome. In case of illness, please inform the supervisor.**

To take part in the course, each student must register in PULS for

- 525712 Lab course Astrophysics: Praktikum
- Lab course Astrophysics: Preparatory Seminar
- All issues regarding the Lab Course are communicated **exclusevely** via *uni-potsdam.de* accounts

To take part in the course, each student must be a member of a team:

- Team organization – partly volunarily
- The supervisers can re-organize teams according to operational situation

To take part in the course, each student must pass our Astro-Quiz:

- The questions will be e-mailed
- The date for the Astro-Quiz: 23 April

The three parts of the lab course

Seminar

- Thursday @14:15, weekly in Room 2.011. Each student must attend **at least** 2/3 of the talks.
- Each student gives their **own** talk. **Register will be taken.**
- Topics related to the observations techniques, objects, and astrophysical tools

Observations

- Performed in **groups of three or two**
- Each team will have a short ($\sim$ 15 min) interview with the Lab team to qualify for observations
- Interviews and observations are scheduled upon arrangement
- Two observations - spectroscopy and photometry - using OST.

Reports

- Content: theoretical background, observation, data reduction, analysis, results, and discussion
- Must be in accordance with the template (see Wiki)
- Final deadline for reports is **4 weeks** after the last observation

Seminar

Talks:

- provide and refresh the background knowledge for the observations;
  - **important for the data reduction and analysis;**
- topics are given by the supervisor $\Rightarrow$ Wiki
  - talks are followed up by **active** discussion. The participation in the **discussion is obligatory**.
- Gain experiences in giving a talk
- Talks duration: about 30 min; followed up by a **discussion**
- Students should send the supervisor their slides a week earlier for comments.
- Slides will be made available to every participant $\Rightarrow$ Wiki

Observations

- To prepare for the interview and the Astro-Quiz: textbooks
  - Hannu Karttunen *"Fundamental Astronomy"*
  - Arnold Hanslmeier *"Introduction to Astronomy and Astrophysics"*
- Within the scope of the lab course:
  - N1 - Stellar spectra of different spectral types
  - N2 - Photometry of open star clusters
- Description of the observations and data reduction $\Rightarrow$ Wiki
- **When you do the observations N1 and N2 is up to you!**
  - Pass the interview with the lab team
  - Make a target list
  - Check if targets are observable
  - Check weather conditions
  - Book a slot for the night $\Rightarrow$ Wiki
- Fill out an observational protocol during the observation

Solar Observations

- *Einsteinturm* Telescope
- Two-three groups
- Each Team produces own S1 and S2 Reports
- We check the conditions and tell you at which day we are going to the solar observatory

observational_protocol.pdf

Observations

- Clear nights are rare
- Usually: **the first month of the semester are the best**
- Observation have to be finished before

  June 15, 2026

- Short interviews by instructors during observations
- Unprepared students **do not** observe

- Check temperatures and be prepared to be outside for several hours
- Check public transport timetable

- Data reduction and data analysis can be performed on our laboratory computer
  - directly at the computer in room 2.009
  - via SSH login $\Rightarrow$ Wiki

Reports

- Deadline is **three** weeks after the last observation was completed
- Content is according the template $\Rightarrow$ Wiki
  - Give theoretical overview and describe all relevant physics needed to perform this observation and the data analysis
  - Describe the data reduction
  - Present your result (attach all graphs, plots and images)
  - Discuss your findings (literature comparison, error analysis)
- Attach observational protocol
- Protocols are a preparation for actual scientific documents, try to work according to those standards
- Example protocol $\Rightarrow$ Wiki
- **Attention:** Groups, which do not hand in the protocols until the end of the semester fail the lab course and have to repeat it including the observations!

Grading

Requirements to pass:

- A protocol is handed within 4 weeks after the each observation
- *Useful* talk is given to demonstrate that you are prepared for Lab
- at least 75% of other preparatory Lab seminar talks are attended

Administrative Issues

- **e-mail related to the Lab Course should be send to** to

  prakt@astro.physik.uni-potsdam.de

  Lab related e-mails will not be read/answered otherwise. For reports put the word **REPORT** as Subject header of the Email. Reports are required to follow this naming scheme: `group_observations_version.pdf`. Example: `M1_N2_01.pdf`.
- The Wiki
  - ... now live and in color

    URL: `http://polaris.astro.physik.uni-potsdam.de/wiki/`