

Observational Astrophysics

20. Topics for the Third Seminar

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1 Future instrumentation in the optical and near-infrared

The topic for the third series of seminars is “Future Instrumentation in the Optical and Near Infrared”. **The date for the presentation of these seminars is January 25.**

The goal here is to introduce a few instruments that are under construction or commissioning, for which we will be able to apply to get observing time, or instruments that will be used in surveys producing public data that we will be able to use (note that some of the instruments that I included already exist and are taking data, but the data has not been published yet).

I have included five new instruments that will be available at ESO telescopes, the new near infrared spectrograph of SALT, and a few instruments from other telescopes that will be conducting surveys.

For each instrument, you can find links that will take you somewhere where further information can be found. For the ESO instruments, I linked the instrument webpage. For the others, it is sometimes hard to find webpages with proper information. In these cases, the links might take you to a publication.

Instructions are: you should plan to use 4-5 minutes for your presentation. This probably means something like 3-5 slides.

Try to find the following information to mention in your seminar (some items are relevant for photometry cameras, other items are relevant only for spectrographs): mention the telescope where the instrument is mounted (at least mention the diameter of the primary, in which type of focus the instrument is mounted, and where in the world is the telescope located); can the instrument be used in service and/or visitor mode?; if you can find it, please show a layout of the instrument; what are the different modes in which the instrument can operate (some instruments are multi mode, others not; if your instrument is capable of polarimetry you just need to mention it, but do not need to go in detail as we did not cover polarimetry yet); what is the field of view (for imaging)?; what are the (standard/basic) set of photometric filters available for use (for imaging)?; can the observers bring their own filters?; if the filters are uncommon, please add information about the passbands; is fast photometry possible (if yes, in which cadence)? what is the policy for photometric standards (is it responsibility of the observatory or of the observer to obtain observations for standards)? what is the wavelength range of operation? (for spectroscopy);

what types of dispersing elements are available for spectroscopy? and if several, can they easily be exchanged during the night? (prisms, grisms, reflection gratings, transmission gratings, echelle grating with cross disperser); mention the options for the entrance slit (can we control the slit width? and the slit length? are there fixed slit sizes? is it possible to use in multi slit mode? how are the multi slits done?); or is it that instead of slits the light is collected by a fiber (or fibers)?; what (range of) resolving power can be achieved?; and maybe any other useful information that you can find.

If your instrument is conducting (will conduct) survey(s): please, add some basic information about the survey(s), including which fields are being/will be observed; if a particular type of object is targeted; where data from the survey(s) can/will be found?; if fields/targets are observed only once or are they monitored regularly?

My tips: The links that I give below can serve as starting point, but you might need to look for information elsewhere also. Some (but not all) of these projects have dedicated websites. Most instruments/surveys are described in dedicated publications (in addition to traditional journals like ApJ, A&A, etc, see also SPIE proceedings, or in [“the Messenger”](#) for ESO instruments). **If there is a particular reference that you think will be useful, but that you do not have access and can not download, do let me know. I might be able to download the publication elsewhere and send you a copy.**

Anyway, remember that this is a short seminar (max 5 min) meant to give only a general overview of the instrument (and, in case, of the surveys).

1. [4MOST](#): 4-metre Multi-Object Spectroscopic Telescope
2. [ERIS](#): Enhanced Resolution Imager and Spectrograph
3. [MOONS](#): Multi Object Optical and Near-infrared Spectrograph for the VLT
4. [SoXS](#): Son of X-Shooter
5. [NIRPS](#): Near Infra-Red Planet Searcher
6. [NIR](#): Near InfraRed integral field spectrograph
7. [LVM-I](#): Local Volume Mapper Instrument
8. [DESI](#): Dark Energy Spectroscopic Instrument
9. [MSE](#): Maunakea Spectroscopic Explorer
10. [WEAVE](#): WHT Enhanced Area Velocity Explorer