

Norwegian Olympiad on Astronomy and Astrophysics

Training week's schedule
11th - 15th March 2024



Norsk astronomiolympiade: <https://www.mn.uio.no/astro/tjenester/publikum/ol-astronomi-og-astrofysikk/>

([1st round exam](#), [2nd round exam](#), [list of actual finalists](#))

On Friday March 15th the students will take the final test. **The top 5 students will be the winners of the national olympiad and invited to compete at the [17th IOAA 2024 – Brazil \(17th - 26th August 2024\)](#).**

General information:

For those staying at the hotel (7 students):

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- For those staying at the hotel (12 students): **Twin rooms by the Thon Hotel Ullevål Stadion, Sognsveien 77C, 0855 Oslo** . For more info visit the website: <https://www.thonhotels.no/hoteller/norge/oslo/thon-hotel-ullevaal-stadion/>
- **Meals:** the Astro-OL will provide the students lunches and dinners (breakfast included in the hotel rate for those staying at the hotel) for the duration of the course, i.e. from Monday to Friday (no dinner on this day). Those travelling on Sunday shall take care of their meals and no reimbursement is possible, unfortunately.
- **Transportation:** travel costs will be reimbursed upon presentation of receipts and the ticket (e.i. boarding pass for flights, train ticket etc..). On Friday 15.03 the students will be asked to fill in a claim form for reimbursements of the travel expenses.

Subjects of the course:

Adapted from IOAA Syllabus: <http://www.ioaastrophysics.org/syllabus/>

Each lecture/ presentation at the training will be shared among the students by email after the training week.

What students need to bring along:

For the classes, the students need to bring a calculator and a ruler. If it easy to bring along, a laptop could be helpful but it is not necessary, as you will work in small groups. It is up to the student.

For the observation evening, the students need to bring: warm clothes for staying outside in the evening below zero degree.

All the classes will take place at:

Institutt for teoretisk astrofysikk (ITA)

Svein Rosselands hus ([kart](#))

Sem Sælands vei 13

0371 OSLO

Rooms: Auditoriet (room 209, 2nd floor) and RoCS meeting rooms (K09, K08, basement).

Contact information:

- Martina D'Angelo, 96714467 (for emergency only), mardan@astro.uio.no
- Håkon Dahle, hakon.dahle@astro.uio.no
- Herman Sletmoen, herman.sletmoen@astro.uio.no
- Farbod Hassani, farbod.hassani@astro.uio.no
- Nicolas Aurelien Corentin Poirier, n.a.c.poirier@astro.uio.no
- Ignasi Josep Soler Poquet, i.j.s.poquet@astro.uio.no

Monday 11/3 Svein Rosselands hus**Theme: Welcome at ITA / Competing at the IOAA**

10:00 – 10:30 Auditoriet 209	Welcome message / Training week and IOAA: overview	Per Barth Lilje (ITA) Håkon Dahle and the Astro-OL committee
10:30 – 11:00 Auditoriet 209	IOAA 2019: A personal experience IOAA 2022: A personal experience	Iver Oknes (Fysikk og Astronomi/ UiO) Paul Johan Slungaard
11:00 – 11:10	<i>10 min break</i>	
11:10 – 11:40 Auditoriet 209	Working with space after IOAA as a student	Đorđe Veljkovic (NTNU)
11:40 – 12:15 Auditoriet 209	Training session: solving some of these exercises	Herman Sletmoen (ITA) Farbod Hassani (ITA)
12:15 – 13:00	<i>Lunch break</i>	
13:00 – 14:00 RoCS K09	Training session: solving some of these exercises	Herman Sletmoen (ITA) Farbod Hassani (ITA)
14:00 – 14:15	<i>15 min break</i>	
14:15 – 15:30 RoCS K09	Training session: solving some of these exercises	Herman Sletmoen (ITA) Farbod Hassani (ITA)
15:30 – 16:15 RoCS K09	Fra mytologi til vitenskap	Christophe Kristian Blomsen (ITA)
16:30 – 18:00 Frederikke spiseri	Dinner Tacoteket + games at Union371	Herman Sletmoen (ITA) Farbod Hassani (ITA)

Tuesday 12/3 Svein Rosselands hus**Theme: the Universe**

09:00 – 10:45 Auditoriet 209	Introduction to Cosmology	Frode Kristian Hansen (ITA)
10:45 – 11:00	<i>15 min break</i>	
11:00 – 12:15 Auditoriet 209	Various types of exercises from AST2000 - introduction to astrophysics.	Frode Kristian Hansen (ITA)
12:15 – 13:00	<i>Lunch break (the class move to the basement RoCS K09)</i>	

13:00 – 13:30 RoCS K09	Hva kan lys fortelle oss om universet?	Nils-Ole Stutzer (ITA)
13:30 – 14:00 RoCS K09	Galaxies: The Beautiful Diversity and Complexity of the Universe	Rubinur Khatun (ITA)
14:00 – 14:15	<i>15 min break</i>	
14:15 – 15:00 RoCS K09	Dark matter, dark energy Gravity well demonstration	Farbod Hassani (ITA) Herman Sletmoen (ITA)
15:00 – 16:00 RoCS K09	Training session: solving questions and various exercises	Farbod Hassani (ITA) Herman Sletmoen (ITA)
16:00 – 16:15	<i>15 min break</i>	
16:15 – 17:15 RoCS K09	Training session: solving questions and various exercises	Farbod Hassani (ITA) Herman Sletmoen (ITA)
17:30 – 20:00 <i>Vilhelm Bjerknes' hus</i>	<i>Social event organised by the faculty of Mathematics and Natural Sciences (MatNat) at UiO</i>	
Wednesday 13/3 Svein Rosselands hus		
Theme: Observational Astronomy		
09:00 – 10:15 RoCS K09 and K08	Detectors and the Earth's atmosphere	Håkon Dahle (ITA) Ignasi Poquet (ITA, RoCS)
10:15 – 10:30	<i>15 min break</i>	
10:30 – 11:00 RoCS K09 and K08	Robotic Telescope	Vegard Rekaa
11:00 – 11:15	<i>15 min break</i>	
11:15 – 12:15 RoCS K09 and K08	Magnitudes, photometry and variable stars.	Håkon Dahle (ITA) Ignasi Poquet (ITA, RoCS)
12:15 – 13:00	<i>Lunch break</i>	
13:00 – 14:00 RoCS K09 and K08	Telescopes and the sky	Vegard Rekaa
14:00 – 15:00	Sun	Ignasi Poquet (ITA, RoCS)

RoCS K09		Håkon Dahle (ITA)
15:00 – 15:15	<i>15 min break</i>	
15:15 – 17:30 RoCS K09	Distance measurements Sky maps, catalogues, ephemerides and nomenclature of astronomical objects.	Håkon Dahle (ITA)
17:30 – 18:30	<i>Dinner at ITA (RoCS kitchen)</i>	
18:30 – 19:30 RoCS K09 and K08	Telescope indoor training	Vegard Rekaa
19:30 – 21:30 circa	Observing program: ~4-5 groups circulate between 4-5 telescopes and ~2 binoculars - Naked-eye observations: learning the sky, variable star observations - DSLR astrophotography through telescopes - Finding objects through a telescope: Double stars, star clusters, planetary nebulae, galaxies, AGN	Håkon Dahle (ITA) Vegard Rekaa Nicolas Poirier (ITA, RoCS) Aditi Bhatnagar (ITA, RoCS)
Thursday 14/3 Svein Rosselands hus		
Theme: Solar and stellar properties		
09:00 – 10:45 Auditoriet 209	Solar/stellar structure and stellar evolution	Luc Rouppe van der Voort (ITA, RoCS) Ignasi Poquet (ITA, RoCS)
10:45 – 11:00	<i>15 min break</i>	
11:00 – 12:15 Auditoriet 209	Photometry / HR diagram	Tiago Pereira (ITA, RoCS)
12:15 – 13:00	<i>Lunch break (ITA's foyer)</i>	
13:00 – 14:00 Auditoriet 209	Stellar classes / Spectral lines	Tiago Pereira (ITA, RoCS)
14:00 – 14:15	<i>15 min break (moving to the basement)</i>	

14:15 – 15:00 RoCS K09	På jakt etter eksoplaneter	Eilif Sommer Øyre (ITA, RoCS) Sven Wedemeyer (ITA, RoCS) Nicolas Poirier (ITA, RoCS)
15:00 – 15:15	<i>15 min break</i>	
15:15 – 17:00 RoCS K09	Training session: solving questions and various exercises	Nicolas Poirier (ITA, RoCS) Ignasi Poquet (ITA, RoCS)
17:30 –	<i>Dinner at Peppes Pizza - Stortingsgaten (Stortingsgata 4, Oslo)</i>	
Friday 15/3 Svein Rosselands hus		
09:00 – 11:30 RoCS K09 and K08	Final exams	Herman Sletmoen (ITA) Ignasi Poquet (ITA, RoCS)
11:45 – 12:45	<i>Lunch break</i>	
13:00 – 13:30 RoCS K09	Practical things: filling in claim forms	ITA administration
13:45 – 14:00 RoCS K09	Summary and final remarks / End of the training week Group - single photos	Norsk Astronomiolympiade Committee
14:30 – 15:30 <i>Vilhelm Bjerknes' hus</i>	<i>Realfag-OL: Closing Ceremony with UiO rektor Svein Stølen and forsknings- og høyere utdanningsminister Oddmund Hoel</i>	