

# The German – Norwegian PhD Research School

Norwegian Centre for Space-related Education (NAROM)

Universities of Oslo and Bergen

Bergen University College,

Ruprecht-Karls-Universität, Heidelberg

## PROGRAM

**3<sup>rd</sup> – 8<sup>th</sup> October 2011**

<i>Organized by:</i>	<b>NAROM and Andøya Rocket Range (ARR) in cooperation with the University of Oslo</b>
<i>Time:</i>	<b>4<sup>th</sup> – 7<sup>th</sup> October 2011</b>
<i>Arrival/departure:</i>	<b>3<sup>rd</sup>/8<sup>th</sup> October 2011</b>
<i>Place:</i>	<b>ARR/NAROM</b>
<i>Student group:</i>	<b>18 students and lecturers from Oslo, Bergen and Heidelberg</b>
<i>Lectures:</i>	<b>The program is divided into lectures and exercises</b>
<i>Accommodation/food:</i>	<b>All students live in single rooms at Hotel Grønnbua. All meals included.</b>

**Lecturers/management/staff:**

PhD Student	Bekkeng	Tore Andrè	TAB	University of Oslo	Lecturer
Physicist	Biebricher	Alexander	AB	NAROM	Lecturer/lab
Head of ALOMAR	Blindheim	Sandra	BL	ALOMAR	Guide ALOMAR
Head of Marketing and Communications	Dahle	Kolbjørn	KoDa	ARR	Lecturer
Range Safety Engineer	Dragøy	Petter	PD	ARR	Operation
Reception/secretary	Ellingsen	Janne	JE	ARR	ARR reception
Electronics Engineer	Gansmoe	Thomas	TG	NAROM	Lab
Educational Manager	Grande	Jøran	JG	NAROM	Management
Housekeeper/Service Supplier	Grande	Tone	TGr	ARR	Accommodation/food
Reception/secretary	Hanssen	Anita	AH	NAROM	NAROM reception
Director of Science and Technology	Gausa	Michael	MG	ALOMAR/ARR	Lecturer
Professor	La Hoz	Cesar	CLH	University of Tromsø	Lecturer
Physicist/project manager	Nicolaisen	Filip Ferris	FFN	NAROM	Lecturer/lab
MSc Student	Miles	David	DM	University of Alberta	Canadian coordinator
Housekeeper/Service Supplier	Olsen-Thune	Monica	MOT	ARR	Accommodation/food
Physicist	Rae	Jonathan	JR	University of Alberta	Lecturer
Professor	Robertson	Scott	SR	University of Colorado	Lecturer
Technical Responsible Hybrid Rocket Propulsion	Rønningen	Jan-Erik	JER	NAMMO Raufoss	Lecturer
Chef	Rydningen	Andre	AR	ARR	Food
Assistant Professor	Sternovsky	Zoltan	ZS	University of Colorado	Lecturer
Professor	Stette	Gunnar	GS	NTNU	Lecturer
Educational Consultant	Strømdal	Hege – Merethe	HMS	NAROM	Management
Housekeeper/Service Supplier	Tjeldnes	Ina Simonsen	IST	ARR	Accommodation/food

**Monday 3<sup>th</sup> OCTOBER**

Time	Activity	Responsible	Place	Note
2300	Arrival Grønnbua/check in	AH	Grønnbua	Transport

## TUESDAY 4<sup>th</sup> OCTOBER

Time	Activity	Responsible	Place	Note
0730 - 0815	Breakfast	---	Grønnbua	
0830	Transport to ARR	AH	Grønnbua	Transport
0845 - 0930	Presentation of ARR	KoDa	Conference room A	
0945 - 1030	Presentation of NAROM	FFN	Conference room A	
1030 - 1045	Coffee/tee break with fruit	AR	Dining room	
1045 - 1215	Guided tour ARR	FFN/JG	ARR	
1215 - 1300	Lunch	AR	Dining room	
1315 - 1400	Lecture: Balloons and radiosondes	AB	Conference room ABC	Together with CaNoRock IV
1400 - 1445	Lecture: Rockets and how they work – an introduction	JER	Conference room ABC	Balloon release!
1500 - 1545	Lecture: Rocket Aerodynamics and Stability an introduction	JER	Conference room ABC	
1600 - 1630	Dinner	AR	Dining room	
1730 - 1815	Lecture: A Digital Fluxgate Magnetometer for Rocket and Satellite Applications	DM	Conference room ABC	Together with CaNoRock IV
1830 - 1915	Lecture: High altitude balloons and the radiation belts	JR	Conference room ABC	Together with CaNoRock IV
1930	Transport back to Andenes	AH	ARR	Transport

## WEDNESDAY 5<sup>th</sup> OCTOBER

Time	Activity	Responsible	Place	Note
0730 - 0815	Breakfast	---	Grønnebua	
0830	Bus leaves	AH	Grønnebua	Transport
0900 - 1400	Sightseeing Andøya, lunch at Nordtun Gård	AH		Transport
1400	Return to ARR	AH		Transport
1415 - 1500	Lecture: Moon, Lunar dust and dust detection	ZS	Conference room A	
1515 - 1600	Lecture: Detection of Charged Aerosol Particles in the Mesosphere by Rocket-born Probes	SR	Conference room A	
1600 - 1630	Dinner	AR	Dining room	
1730 - 1815	Lecture: Instrumentation of sounding rockets	TAB	Conference room A	
1830 - 1915	Lecture: The Earth's Mesosphere as a Dusty Plasma Laboratory	CLH	Conference room A	Together with CaNoRock IV
1930	Transport back to Andenes	AH	ARR	Transport

## THURSDAY 6<sup>th</sup> OCTOBER

Time	Activity	Responsible	Place	Note
0730 - 0815	Breakfast	----	Grønnebua	
0830	Transport to ARR	AH	Grønnebua	
0850 - 0900	Safety brief	ARR	Conference room ABC	
0900 - 0945	Pre-flight meeting	ARR	Out side	
0945 - 1000	Photo session	ARR	Designated areas	USOC, NIKE
1015 - 1130	Rocket operation	Students	Designated areas	USOC, NIKE
1130 - 1215	Lecture: Introduction to Telemetry – an efficient transfer of information	GS	Conference room A	
1215 - 1300	Lunch	AR	Dining room	
1330 - 1400	Post-flight meeting	ARR	Conference room ABC	
1400 - 1415	Transport to ALOMAR	AH	ARR	Transport
1415 - 1500	Presentation of ALOMAR	Zuguang Guan	ALOMAR	
1500 - 1545	Guided tour of ALOMAR	ALOMAR	ALOMAR	
1545	Transport back to ARR	AH	ALOMAR	Transport
1600 - 1630	Coffee/tea and waffles	AR	Dining room	
1630	Transport to Andenes	AH	ARR	Transport
2000	Dinner at Palermo	AH	Palermo	

## FRIDAY 7<sup>th</sup> OCTOBER

Time	Activity	Responsible	Place	Note
0730 - 0815	Breakfast	---	Grønnbua	
0830	Transport to ARR	AH	Grønnbua	
0845 - 1030	Lab: Paper rocket	FFN/TG	Conference room AB	
1030 - 1045	Coffee/tea and fruit	AR	Dining room	
1045 - 1130	Lecture: Magnetic Reconnection and its role in space weather	CLH	Conference room AB	
1145 - 1230	Lecture: Magnetic Reconnection and its role in space weather	CLH	Conference room AB	
1245 - 1330	Lunch	AR	Dining room	
1330 - 1415	Lecture: What phycists need to know about Lidar	MG	Conference room AB	
1430 - 1515	Lecture: What phycists need to know about Lidar	MG	Conference room AB	
1515 - 1600	Evaluation	FFN	Ferdinand	
1600 - 1630	Coffee/tea and cake	AR	Dining room	
1630 -	Transport back to Andenes	AH	ARR	Transport

## SATURDAY 8<sup>th</sup> OCTOBER

Time	Activity	Responsible	Place	Note
0730 - 0800	Breakfast and check out	B. Skaali	Grønnbua	
0800	Transport to Andenes Airport	AH	Grønnbua	