



CaNoRock XXIII

18 PARTICIPANTS

February 26th–March 1st, 2024

Contributors

Initials	Name	Affiliation	Role
AG	Anita Grønseth	Andøya Space Education	Astrophysicist
AH	Anita Hansen	Andøya Space Education	Administration
BÅB	Bjarne Ådnanes Bergtun	Andøya Space Education	Physicist
EG	Espen Granli	Granli bemanning	Night-time reception
FBP	Fredrik Bjarte Pettersen	Andøya Space Education	Physicist
HMS	Hege-Merethe Strømdal	Andøya Space Education	Education Admin Manager
JMGP	José Miguel González Pérez	Andøya Space Education	Astrophysicist
KO	Ketil Olsen	Andøya Space	President
MF	Marcos Fraga	Andøya Space Education	Electronics Engineer
ML	Morten Larsen	Andøya Space	Range Control Officer
PH	Preben Hansen	Andøya Space	Director of Launch Operations
SB	Simen Bergvik	Andøya Space Education	Teacher
TØ	Truls Ørdal	Andøya Space Education	Science Teacher

GENERAL INFORMATION FOR COURSE PARTICIPANTS

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Overall learning outcome

There are two overarching goals:

- A better understanding of scientific rocket campaigns based on first-hand experience
- Sharpened collaborative skills and valuable experience in scientific project collaboration

More specifically, you will gain a better understanding of

- preparations and processes related to a rocket launch
- the phases of a sounding rocket project: Defining scientific objectives, building sensors, payload integration and testing, telemetry, data analysis, and presentation of findings
- the use of rockets, balloons, and ground-based instruments for studying processes in the atmosphere

Day 0 — Sunday February 25th — Arrival

Welcome!

Time	Activity	Responsible	Location	Note
15:40	Arrival at Andøya Airport	—	Andøya Airport	10 norske stud
16:00	Transfer to Lysthuset	AH	Andøya Airport	
16:05–17:00	Dinner at Lysthuset	AH	Lysthuset	
17:00–17:15	Transfer from Lysthuset to Andøya Space	AH	Lysthuset	
17:15	Welcome, practical information and check-in	HMS	Service Desk	
17:30	Arriva Andenes Airport	---	Andenes Airport	8 Can Stud
17:45	Transfer from Andenes Airport to Andøya Space	AH	Andenes Airport	
18:00-18:30	Welcome, practical information and check-in	HMS	Service Desk	
20:30–21:00	Supper	Kitchen	Havblikk	Self-service

Day 1 — Monday February 26th — Campaign start

Welcome!

Learning outcome

You will learn more about

- Scientific rocket campaigns
- Team specific learning outcomes

Time	Activity	Responsible	Location	Note
08:00–08:30	Breakfast	Kitchen	Havblikk	
08:45–09:00	Official opening		Saturn	
09:00–09:30	Welcome, goals and expectations	BÅB	Saturn	
09:30–10:30	Introduction to the student rocket campaign	BÅB	Saturn	
10:30–10:45	Fruit break	Kitchen	Foyer	
10:45–12:30	Tour of Andøya Space	TØ, AG	Foyer	Hand in section-wishes before going to lunch!
12:30–13:15	Lunch	Kitchen	Havblikk	
13:15–15:15	Student rocket work	BÅB, KE, MF, SB, TØ	Saturn, Pluto, Mars	
15:00–15:30	PI-team startup meeting	AG	Saturn	Only for the PI-team!
15:30–16:15	Workshop: Ideas for scientific cases	PI team (AG)	Saturn	
16:15–16:30	Status meeting	PI team (AG)	Saturn	
16:30–17:15	Dinner	Kitchen	Havblikk	
18:00–20:30	Travel to Mars / Get together	Spaceship Aurora	Foyer	Voluntary
20:30–21:00	Supper	Kitchen	Havblikk	Self-service

Day 2 — Tuesday February 27th — Student rocket work

Learning outcome

You will learn more about

- Scientific balloons & atmospheric physics
- Team specific learning outcomes

Time	Activity	Responsible	Location	Note
08:00–08:30	Breakfast	Kitchen	Havblikk	
08:45–09:00	Status meeting	PI team (JMGP)	Saturn	
09:00–09:45	Lecture: Balloons and radiosondes	JMGP	Saturn	
09:45–10:30	Student rocket work	BÅB, KE, MF, SB, TØ	Pluto	
10:30–10:45	Fruit and Coffee break	Kitchen	Foyer	
10:45–12:30	Student rocket work	BÅB, KE, MF, SB, TØ	Pluto	
12:30–13:15	Lunch	Kitchen	Havblikk	
13:15–16:00	Student rocket work	BÅB, KE, MF, SB, TØ	Pluto	First possibility for PTU (balloon) release
13:15–14:00	PI-team meeting	AG	Saturn	If needed
14:00–16:00	Flight modelling	JMGP	Saturn	Only for the Flight Modelling section!
16:00–16:30	Status meeting	PI team (JMGP)	Saturn	Presentation & discussion of results from flight modeling
16:30–17:15	Dinner	Kitchen	Havblikk	
17:15–20:30	At your disposal	Students	Andøya Space	
20:30–21:00	Supper	Kitchen	Havblikk	Self-service

Day 3 — Wednesday February 28th — Final integration

Learning outcome

You will learn more about

- Team specific learning outcomes

Time	Activity	Responsible	Location	Note
08:00–08:30	Breakfast	Kitchen	Havblikk	
08:45–09:15	Status meeting	PI team (KE)	Saturn	Extra time for settling scientific cases
09:15–10:30	Student rocket work	BÅB, KE, MF, SB, TØ	Pluto, Saturn	
10:30–10:45	Fruit and Coffee break	Kitchen	Foyer	
10:45–12:30	Student rocket work	BÅB, KE, MF, SB, TØ	Pluto, Saturn	Last possibility for PTU release
12:30–13:15	Lunch	Kitchen	Havblikk	
13:15–14:15	Student rocket work	BÅB, JMGP, KE, MF, SB, TØ	Pluto, Saturn	
14:15–15:45	Final integration and testing	BÅB, KE, MF, SB, TØ	Pluto, Saturn	
15:45–16:15	Rocket signing and photoshoot	AG	Saturn	
16:15–16:30	Status meeting	PI team (AG)	Saturn	
16:30–17:00	Waffles	Kitchen	Havblikk	
17:00–19:00	At your disposal	Students	Andøya Space	
19:00–21:00	Pizza Evening	Kitchen	Havblikk	

Day 4 — Thursday February 29th — Launch day!

Learning outcome

You will learn more about

- Scientific rocket campaign
- Team specific learning outcomes

Time	Activity	Responsible	Location	Note
08:00–0830	Breakfast	Kitchen	Havblikk	
08:45–09:00	Status meeting	PI team (SB)	Saturn	
09:00–10:00	Pre-flight meeting and safety brief	ML	Birkeland Auditorium	
10:15–10:30	Presentation of balloon trajectory	PTU team (SB)	Birkeland Auditorium	
10:30–10:45	Fruit and Coffee break	Kitchen	Foyer	
10:45–11:15	Python script walkthrough	BÅB	Saturn	
11:15–12:00	Start preparing scripts for data analysis	PI team (BÅB)	Saturn	Test data will be provided
12:00–12:15	Prepare for launch	BÅB, TØ	Designated areas	
12:15–13:00	Lunch	Kitchen	Havblikk	Note early time!
13:00–14:30	Rocket operation	BÅB, SB, TØ, JMGP	Designated areas	
14:30–15:15	Post-flight meeting	ML	Birkeland Auditorium	Exact time announced during launch operation
15:30–16:15	Case work	PI team (BÅB)	Saturn	Data analysis and preparation for presentations
16:15–16:30	Status meeting	PI team (BÅB)	Saturn	
16:30–17:15	Dinner	Kitchen	Havblikk	
17:30–18:15	Case work	PI team (BÅB)	Saturn	
18:15–20:30	Case work	PI team	Saturn	
20:30–21:00	Evening meal	Kitchen	Havblikk	Self-service

Day 5 — Friday March 1st — Campaign end

Learning outcome

You will learn more about

- Physics
- Data analysis and presentation

Time	Activity	Responsible	Location	Note
08:00–08:30	Breakfast	Kitchen	Havblikk	
08:45–09:00	Status meeting	PI team (JMGP)	Saturn	
09:00–09:45	Lecture: The life of a sounding rocket	JMGP	Saturn	
10:00–10:30	Case work	PI team (BÅB)	Saturn	
10:30–10:45	Fruit and Coffee break	Kitchen	Foyer	
10:45–12:30	Case work	PI team (BÅB)	Saturn	
12:30–13:15	Lunch	Kitchen	Havblikk	
13:15–15:00	Case presentations	PI team (BÅB)	Saturn	
15:15–16:00	Evaluation and cake	BÅB	Saturn	
16:00	Taxi to Andøya Airport	AH	Foyer	

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Revisions

Date	Who	Note
04/01/2024	BÅB	Draft; most names missing
05/01/2024	BÅB	Changes from earlier campaigns implemented
09/01/2024	BÅB	Names added
10/01/2024	BÅB	Added draft-watermark
19/02/2024	BÅB	Added extra resources
21/02/2024	BÅB	Updated launch day personnel; minor typographical fixes
22/02/2024	HMS	Minor adjustments
22/02/2024	BÅB	Draft-watermark removed