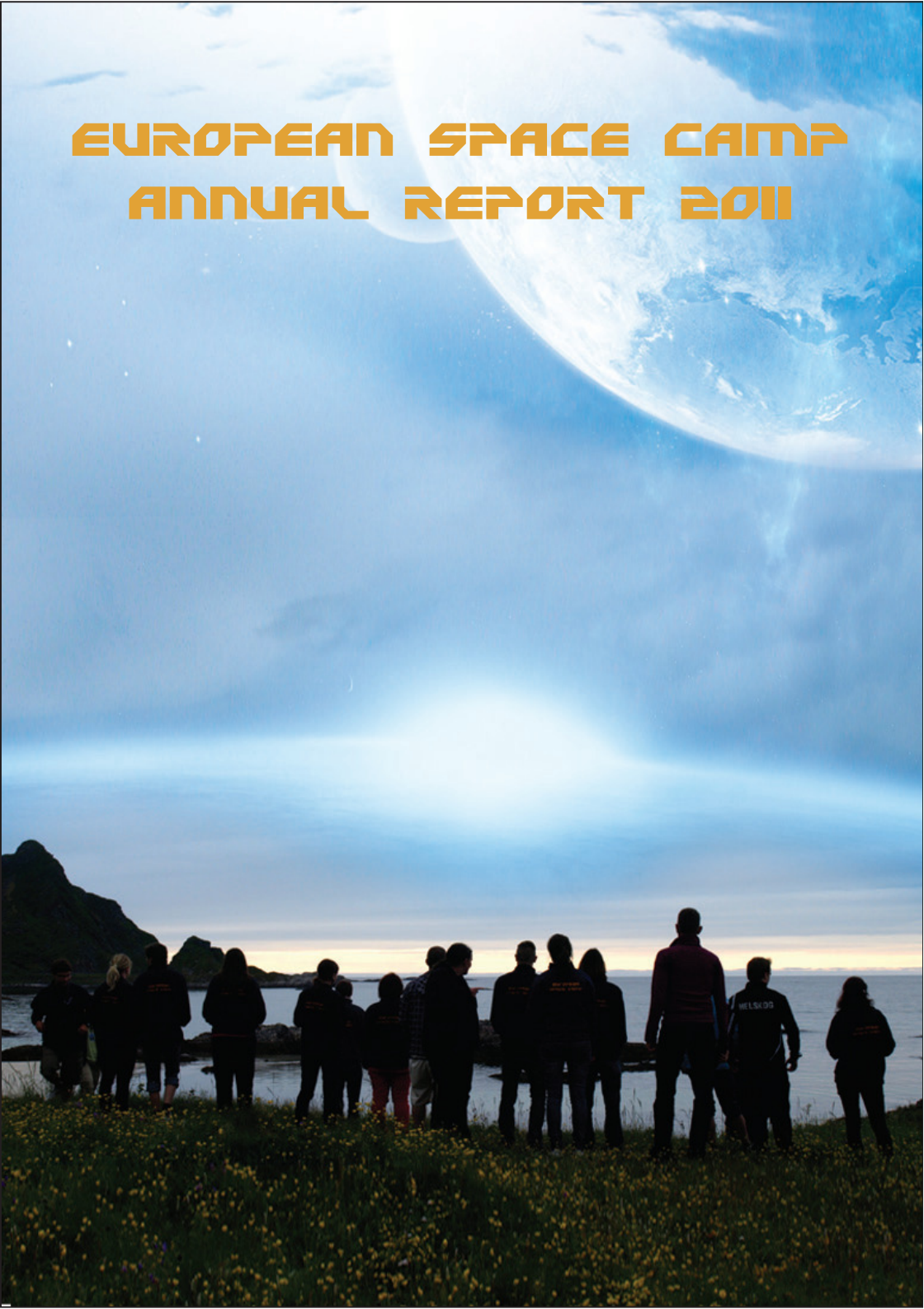


EUROPEAN SPACE CAMP ANNUAL REPORT 2011

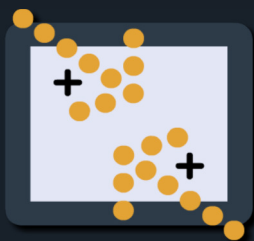


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Learn



COOPERATE



EXPLORE



INTRODUCTION

European Space Camp 2011 had a celebratory feel to it throughout: it included the celebration of the 15th anniversary of European Space Camp, a visit from Georgy Grechko, the first cosmonaut to visit ESC, the presentation of the European Space Camp Lifetime Achievement Award to Professor Alv Egeland, who has lectured at every single one of the 16 camps to date, and ESC's first participant from Hong Kong - recognition indeed of our growing international profile.

Despite the camp now being well established, the team is always looking at how to improve the participants' experience at European Space Camp - as our slogan says, "the sky is not the limit, it's where the fun begins!". With this in mind, this year also saw us update our entire website and despite several early teething problems, we are sure that this upgrade will benefit applicants and participants of ESC for years to come.

The talented staff and lecturers combined with the camp's unique location at the Andøya Rocket Range show that learning can be both challenging and engaging at the same time. The participants'

direct involvement in every stage of the rocket campaign enables them to put theory into practice in the best possible way. The diversity of this year's participants, coupled with their enthusiasm and academic excellence created a wonderful atmosphere at this year's camp, resulting in an unforgettable week of science, technology and fun.

It takes a huge amount of effort from a lot of people, both volunteers and professionals to ensure the successful running of ESC. We are very fortunate to have the Norwegian Centre for Space-related Education (NAROM) as a partner – they have the necessary expertise to ensure that the academic level of ESC remains incredibly high, and their experience in organising camps has proved invaluable. We are also extremely grateful to all of our sponsors and scholarship organisations, who have all contributed in making ESC 2011 the wonderful success that it has been.

Frida Vestenes
Head of Team Space Camp
Norwegian Association of Young Scientists

ABOUT

European Space Camp was first organised in 1996. It started out as a Nordic camp, but over the years it has evolved into an international event. A total of 22 countries from four continents have been represented at the camp. The camp's main purpose has always been to promote science, both as a field to study and to work in. To achieve this we focus on three things: theory, practice and social activities. Our alumni record shows that many of our previous participants go on to study science, engineering and medicine. European Space Camp is organised by the Norwegian Association of Young Scientists and the Norwegian Centre for Space Related Education in co-operation with Andøya Rocket Range, the Norwegian Space Centre and the European Space Agency (ESA).



National Centre for Space Related Education (NAROM)

NAROM is a subsidiary of Andøya Rocket Range. Its main purpose is to increase the national recruitment to space-related subjects. Its role is becoming increasingly relevant in Norway, where the space industry is steadily growing and is in need of bright minds. NAROM organises several courses and events for youths, students and teachers. Its main responsibility in organising European Space Camp is to handle the scientific and academic part of the camp.

Andøya Rocket Range

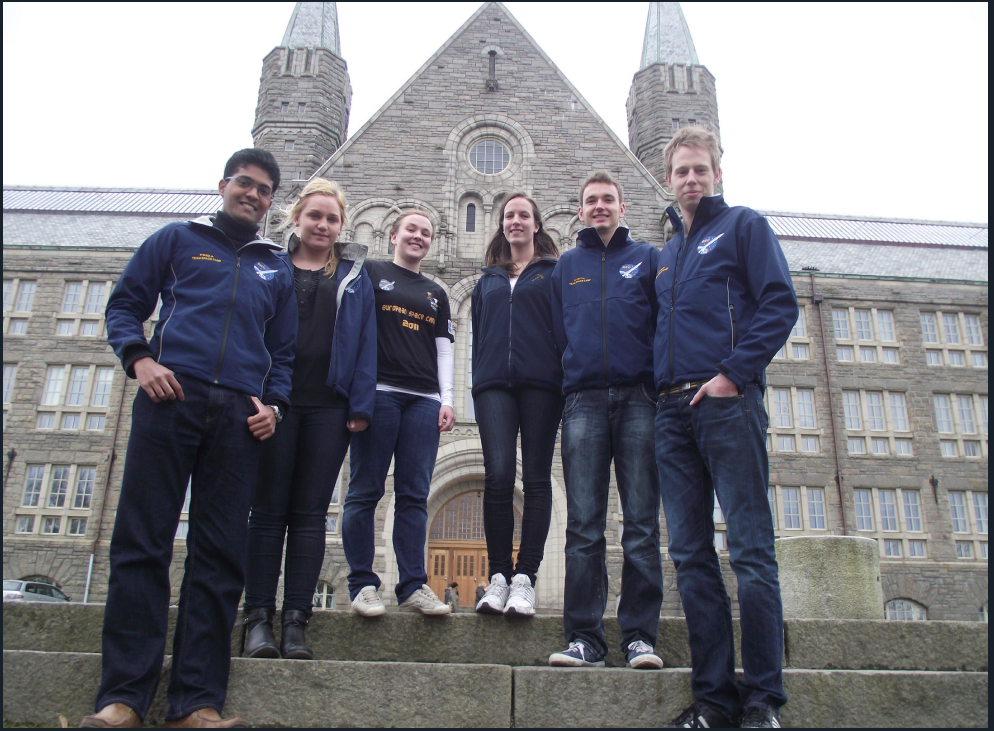
Andøya Rocket Range is a non-military rocket range with decades of experience in launching sounding rockets for atmospheric research. The range also has advanced facilities for ground-based experiments using LIDARS and radars.



Norwegian Association of Young Scientists

The Norwegian Association of Young Scientists (Forbundet Unge Forskere) is a non-profit organisation that works to promote an interest for science among young people. The association is currently organising European Space Camp, but has previously organised other camps like CyberCamp and BioMed Camp.

UNGE FORSKERE



TEAM SPACE CAMP

Team Space Camp consists exclusively of past participants of ESC. By selecting previous participants we ensure steady recruitment as well as creating a team of motivated people who understand how the camp functions and how it can be further developed.

The entire team works together on a voluntary basis to organise the following year's camp; the team's main responsibilities include: sourcing sponsors, selecting high-calibre participants, organising exciting social activities, recruiting new team members and, of course, ensuring that each camp is an enjoyable and memorable experience for every participant.

The ESC 2011 team consisted of Frida Vestnes (head), Anders Strand, Kine Hansvold, Kjetil Aasen and new trainees from ESC 2010 Maria Råken and Rohan Sheth.

The Team's focus in 2012, in addition to the usual tasks, will be to complete our upgrade of the camp's website and internal systems, whilst striving to increase international exposure and participation. The team is delighted to welcome Henrikke Rokkan Iversen as our new trainee from ESC 2011.

“The sky is not the limit, it's where the fun begins!”

ACCOUNTS 2011

FINANCING (in NOK)	Financial support	Other ⁽¹⁾	Total support
Andøy municipality	5 000	0	5 000
Andøya Rocket Range	30 000	0	30 000
Fugro Seastar AS	15 000	0	15 000
Høgskolen i Narvik	5 000	0	5 000
Kongsberg Satellite Service	26 000	0	26 000
Nammo Raufoss AS	10 000	0	10 000
Norspace	10 000	0	10 000
Norwegian Association of Young Scientists	0	525 000 ⁽²⁾	525 000
Norwegian Centre for Space-related Education	0	250 000	250 000
Norwegian Defence Research Establishment	65 000	0	65 000
Norwegian Space Centre	90 000	0	90 000
NTNU	4 000	0	4 000
Scholarship fees	152 725	0	152 725
University of Svalbard	10 000	0	10 000
University of Tromsø	10 000	0	10 000
Whalesafari Andenes	0	13 760 ⁽³⁾	13 760
Banking interests	1 063	0	1 063
SUM FINANCING	433 788	788 760	1 222 548

(1) By other support, we mean support that we receive in the form of free services or services at a reduced fee

(2) The Norwegian Association of Young Scientists contributed approximately 3500 hours valued at NOK 150

(3) Whalesafari Andenes offers European Space Camp participants a reduced ticket fee. The discount has this financial value

EXPENSES (in NOK)	Budget	Accounting
Course materials	3 800	3 800
Balloon operation (balloon, payload, operation)	4 100	3 210
Rocket campaign (rocket, payload, safety notifications, operation)	71 250	66 025
Lodging and all meals for students, lecturers and Team	213 120	195 161
Travel expenses, lecturers and group leaders	10 000	14 739
Transportation at Andøya (students and Team)	6 750	6 082
Scientific assistance	13 004	10 593
Other expenses NAROM (unforeseen expenses, events, insurance)	34 151	28 212
Whale safari	13 000	17 930
European Space Camp jackets	15 000	17 446
Equipment	1 500	766
Team expenses	8 000	5 418
Travel expenses, Team	39 000	36 579
Office expenses ⁽¹⁾	17 000	16 735
Postage	3 000	1 344
Other expenses Team (including unforeseen expenses)	1 500	820
Transfer to contingency fund	0	8 928
SUM EXPENSES	454 175	433 788

(1) Stationery, bank fees, Space Camp DVDs and annual reports

BUDGET 2012

EXPENSES (in NOK)

Course materials	3 800
Balloon operation (balloon, payload, operation)	4 100
Rocket campaign (rocket, payload, safety notifications, operation)	85 000
Lodging and all meals for students, lecturers and Team	203 670
Travel expenses, lecturers and group leaders	11 000
Transportation at Andøya (students and Team)	6 000
Scientific assistance	11 624
Other expenses NAROM (unforeseen expenses, social events, insurance)	47 305
European Space Camp jackets	17 000
Equipment	1 500
Team expenses	6 000
Travel expenses, Team	39 000
Office expenses ⁽¹⁾	17 000
Postage	3 000
Other expenses Team (including unforeseen expenses)	1 500
SUM EXPENSES	457 499

(1) Stationery, bank fees, Space Camp DVDs and annual reports

Norwegian Association of Young Scientists (FUF) is a not-for-profit organisation, which means that its aim is to organise and run European Space Camp each year within budget, with any leftover funds put into a contingency fund to be used for future camps in case of a shortfall of funding or unexpected extra costs.

European Space Camp 2011 was successfully conducted under budget, with approximately NOK 9000 added to the contingency fund.

One of the main focuses this year was to implement the new logo and design for European Space Camp in all promotional material. The new logo was therefore added to this year's ESC jackets, which caused their cost to be higher than expected. However, all other items stayed within budget, in line with one of the team's aims this year to show austerity in a time of weak global economic conditions. This will again be an important goal in the organising of ESC 2012, where we will be looking to keep costs as low as possible without lowering the quality of the camp. We are expecting our accommodation costs and the cost of the rocket launch to increase for ESC 2012, which makes it imperative that we continue to find new sponsors.

We are extremely grateful for our current sponsors, scholarship organisations and collaborating partners - their continual support of the work and vision of European Space Camp has been crucial to the ongoing success and burgeoning reputation of ESC.



ESC MEMOIRS

When I applied for European Space Camp 2011 this winter, I was aware that many interested and eager youths were going to apply for the camp so I did not get my hopes up too much. So of course I was excited and pleasantly surprised to find an acceptance letter in my inbox!

At this year's camp there were participants from all over Europe, and even one from Hong Kong! Before the camp I was a bit worried that I would end up not making any friends, and that the other participants would be super smart geeks that would be impossible to talk with, but it turned out that this was just prejudice from my side. As we got to know each other more and more, it turned out that we were all just normal youths with an interest in science, technology and space. This process started on the very first evening with pizza, before we played some icebreaker games including "point and shoot" where two people had a name duel where one had to be the first to remember the other participant's name. Afterwards we had a spaghetti and marshmallow tower competition; it was a close race but after several tower collapses we could finally declare a winner.

Our first day at space camp started with what turned out to be daily morning activities - a good way to get the body and mind started in the morning, but not necessarily something one looks forward to at eight in the morning when just getting out of bed seems like enough activity! We proceeded with a sturdy Norwegian breakfast before we got a thorough presentation on the Andøya Rocket Range (ARR) and witnessed the official opening of the camp by Elisabeth Aspaker,



member of the Norwegian Parliament and Odd Roger Enoksen, managing director of ARR.

Later the same day we headed out for a trip to the ALOMAR observatory up one of the many steep mountains of Andøya. This seemed like a fairly new experience for some of the participants who were not used to mountain hiking Norwegian style, but all of us reached the top and could enjoy a magnificent view of ARR, Bleik and Andenes. After our guided tour of ALOMAR we had a group quiz where we also had to create a song that was to be presented later that day, and it is safe to say that this resulted in a variety of good (funny!) songs, and more than a few embarrassed space campers!

After we had learned some rudimentary rocket science skills, we were divided into different working groups. I ended up in the Rocket Payload Assembly group, and after a quick draw of straws I also became Payload Manager. Our group had the important job of making some of the sensors and connecting them all together as well as making



sure that the rocket was correctly balanced. But of course this is only one of the many things that are needed for launching a sounding rocket, so the other groups were busy doing system design, experimental instrumentation, telemetry and rocket physics.

Even though parts of the day were used for group work, we still had time for more lectures (and social activities). And I think that I speak on behalf of all the space campers when I say that one of the most eagerly anticipated lectures was held by cosmonaut Georgy Grechko. This turned out to be a very motivational lecture, and the highlight was seeing Grechko's pictures of earth from space!



“the highlight was seeing Grechko’s pictures of earth from space”

On Saturday it was time for the event that we had prepared for all week. Yes, I am talking about launching our rocket which was named Hyperion MMXI! And as payload manager I got to be a part of the launch sequence and best of all – I got to arm the rocket. The only problem we faced was that a kayaker had ended up within our safety parameters, but he was waved ashore and got to watch the launch from a safe distance.

As I have already mentioned, although we got to experience lots and lots of practical and theoretical science, physics and mathematics, space camp was so much more. Just to give an example of some of the social activities we had during our stay: playing games in the sitting room (some became extremely caught up in (addicted to!)



the game “Werewolf”), rocket fun where the design group launched some demo rockets, a whale safari on the rough Norwegian Sea (that proved a bit too much for some!) followed by the oh-so-embarrassing ESC show, and a GPS-hunt including ninjas equipped with water – lots of water!

And last but not least one of the best things about participating at European Space Camp was the opportunity to get to know other youths with the same interests in space and science, to get to meet people who work in this industry on a daily basis and to, in short, learn from the best and the brightest. And I am confident that the knowledge I acquired during my stay will be truly beneficial for the rest of my education and possibly for my choice of work later in life.

Lastly I would like to thank Andøya Rocket Range and all the organisers for a once-in-a-lifetime opportunity and an unforgettable week.

Henrikke Rokkan Iversen



Bygg din egen rakett

■ Går du på videregående skole, tar naturfag og er gløden interessert i romfart og romforskning, kan du få være rakettforsker i en uke på European Space Camp på Andøya, skriver Norsk Romsenter. I år arrangeres Space Camp fra 26. juni til 4. juli. Aller siste søknadsfrist er 1. april 2011. European Space Camp er en

uke der elever med naturfag og interesse for romforskning og romfart bygger sine egne måleinstrumenter og sin egen rakett. I løpet av uken får elevene møte ekte romforskere og bli kjønt med andre unge som deler interessen for verdensrommet.

Arrangementet samler ca. 24 unge fra hele verden.

Aftenposten



19. januar 2011

forskning.no

Hovedkategorier: kultur, samfunn, helse, Finn fram, bakgrunn, meninger, forskeren

15 år med unge rakettforskere

24 studenter fra hele verden deltok på European Space Camp på Andøya Rakettskytefelt. I år ble campen arrangert.

Berit Ellingsen
Journalist

Fredag 22. Juli 2011
kl. 05:00

I en hel uke har 24 studenter fra hele verden denne sommeren arbeidet som ekte rakettforskere sammen med profesjonelle forskere og ingeniører ved Andøya Rakettskytefelt.

Deltakerne samarbeidet om å bygge nyttelasten til en rakett som ble skutt opp mot slutten av oppholdet.

<http://www.forskning.no/artikler/2011/juli/293817>



NASJONALT SENTER FOR ROMRELATERT OPPLÆRING

European Space Camp med stortingsbesøk og kosmonaut

24 ungdommer fra ni nasjoner avsluttet i går European Space Camp 2011 på Andøya Rakettskytefelt. Årets camp ble nok en suksess med blant annet kosmonaut-besøk på programmet.

Stortingsbesøk
Det ble startet med et stortingsrepresentant Elisabeth Aspaker sto for den offisielle åpningen av campen. Hun er medlem av Stortingets kirke-, utdannings- og forskningskomite, og i en tale til deltakerne understreket hun viktigheten av å bli rakettforskere i fremtiden.

Aspaker sa også at hun hadde hørt Stortingets kirke-, utdannings- og forskningskomitee bar seg ut når hun sto ut av flyet som en del av oppsettet.

<http://www.narom.no/aktuelt.php?aid=7&bid=10&oid=1047>



moss-avis.no Nyheter

Har du forslag til kandidater til Næringslivsprisen 2011? Klikk her



<http://www.moss-avis.no/nyheter/blir-rakettforsker-1.6245917>

<http://www.moss-avis.no/nyheter/blir-rakettforsker-1.6245917>



vol.no facebook

Apner Space Camp

Medlem av Stortingets kirke-, utdannings- og forskningskomite Elisabeth Aspaker besøker Andøy for å åpne European Space Camp på Andøya Rakettskytefelt førstekommande mandag.

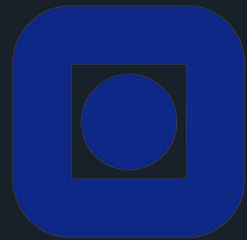


SØK I DAG!

<http://www.vol.no/nyheter/article464073.ece>

<http://www.vol.no/nyheter/article464073.ece>





We would like to thank the following sponsors for supporting us financially in 2011: Norwegian Space Centre, Norwegian Defence Research Establishment (FFI), Kongsberg Satellite Services, Nammo, Fugro, Norspace, Høgskolen i Narvik, UNIS, The University Centre in Svalbard, University of Tromsø, The Norwegian University of Science and Technology (NTNU) and Andøy municipality.