

NAVARINO ENVIRONMENTAL OBSERVATORY

NEO Management

Friday, 30 January 2015

NEO NEA #15 (October - December, 2014)

NEO stands for Navarino Environmental Observatory. But NEO in Greek (νέο) means news as well and NEA is its plural. So this is our news!

Foreword

Our first five years of the NEO partnership have almost passed! We will summarize the most important outcome of this partnership in the forth-coming Annual Report 2014 and in a new leaflet planned to be produced during 2015. In October 2014 an agreement for the coming five years, starting at 1 March 2015, was signed by all three partners. We are happy to see that the collaboration will continue and we hope that the coming years will be as fruitful as the one passed, or even better! NEO has been full of activities during the 4th quarter of 2014, and the most important ones are summarized in this issue of NEONEA. Happy Reading!

Karin and Giorgos



Figure : Taygetos Mountains in Christmas time

Activities

Research

- **ACTRIS network**

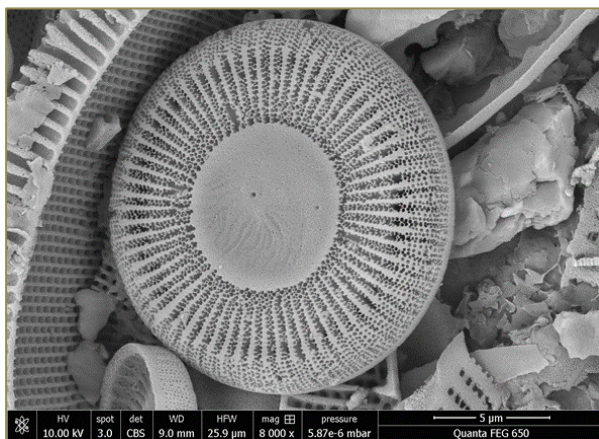
The atmospheric group of NEO participated in the inter-calibration exercise which was organized within the frame of the European network ACTRIS (Aerosols, Clouds and Trace gases Research Infrastructure network) that was held in Leipzig, Germany during the period September 29 – October 3, 2014.

- **Progress in analysis of materials from Alepotrypa Cave**

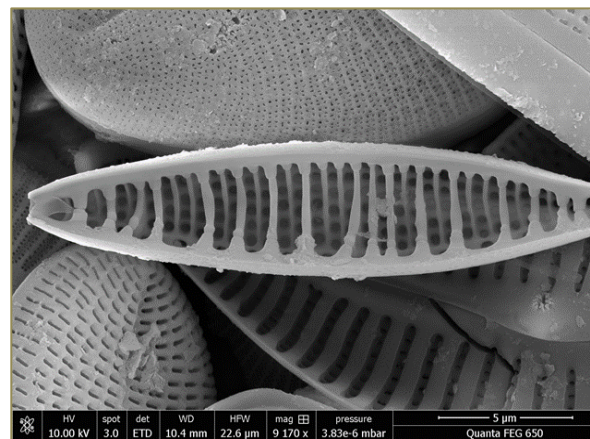
Meighan Boyd has spent the last few months conducting a number of analysis techniques on materials in collaboration with other scientists at a number of facilities. In October petrographic study of a stalagmite from Alepotrypa Cave was conducted at the University of Newcastle, Australia under the guidance of Dr. Silvia Frisia. This gave new insights into how the cave environment has changed over time and will aid in interpretation of stable isotope and trace element data. In November and December, samples were prepared for uranium series dating in collaboration with Dr. Dirk Hoffmann of the Max Planck Institute for Human Evolution, Leipzig, Germany, to provide a chronology for the data. Continuing from work conducted in September, more samples were analyzed for stable isotope variations at the University of Innsbruck, Austria by Prof. Christoph Spötl. The dated stalagmites cover the time period ca 6000 years ago to 1000 years ago as well as much older periods during glacial times. The younger material covers the period when humans occupied the cave and the dark layers in these stalagmites indicate periods when people made fires inside the cave.

- **Analysis of wetland sediments**

Christos Katrantsiotis has finalized the diatom analysis in the sediment core, covering the last 6000 years, retrieved from the drained fen of Agios Floros, at the northern banks of the ancient River Pamisos, in the Messenian plain, SW Peloponnese. A paper, discussing the role of local tectonic processes and climate changes for the observed changes in lake levels at Agios Floros, will be submitted for publication in the beginning of February. In addition, pollen analysis has been initiated on material from the same core from Agios Floros.



Cyclotella distinguenda Freshwater, **planktonic**



Denticula kuetsingii Indifferent **benthic**

Figure 1: Microscope photos of two common diatom species found in Agios Floros

Education

Courses

- **“Natural disasters form a natural- and social science perspective”**
Students’ course, Värmdö Gymnasium, Upper secondary school from Stockholm (October 4-11)

As part of a one semester Natural Science Specialization course a group of students from the upper secondary school, Värmdö Gymnasium, visited NEO in October for a second time. The specialization course is aimed at third year students attending the natural science programme with a global perspective, and the course theme is **“Natural disasters form a natural- and social science perspective”**. The visit to NEO was highly appreciated, and the week included visits to geological, biological as well as historical sights of interest. The purpose of the week was to give the students more understanding of how the landscape is shaped through geological processes and what effect these processes have on biological systems.



Figure 2: Students and teachers from the Värmdö Gymnasium, Stockholm.

- **“PhD excursion”**
PhD students’ course, Stockholm University (October 25-31)

A group of PhD students from Stockholm University has visited NEO for a field course. Together with Dr. Christophe Dupraz, they went to Gialova lagoon and checked the lagoon’s biogeochemistry. Prof. Uwe Ring led an excursion to an exposed fault scarp near the city of Sparta. The fault is the probable site of the 464 BC earthquakes that ruined Sparta. A hunt for fossils, in rocky outcrops and in the limestone building material of the Paleokastro Castle was led by Dr. Otto Hermelin. On the last day, the group visited the Hellenic Centre for Marine Research (HCMR) - where Dr. Alexandra Gogou, led interesting discussions on the marine environment, and gave a tour around the different labs at the HCMR.



Figure 3: PhD Students in Gialova lagoon after microbial mats.

- **“Water management issues from a social science and management perspective”
Masters’ course, Department of Human Geography, Stockholm University (November 20-27)**

The question of water quality and quantity in urban and rural areas was studied with a focus on Greece, including examples of sustainable water usage and exploitation over time. During their visit at NEO, the students followed several lectures and also organized and implemented a series of interviews with farmers, fishermen, locals, representatives from the Water Management agency of Pylos, the Captain Vassilis Foundation and associates from the Costa Navarino resort in order to deal with different aspects of water related issues for settlements and water management. This master course is one of the courses within a broader university programme for internationalization developed by Swedish universities and the Swedish Institutes around the Mediterranean. (For more details see www.usinetwork.se.)



Figure 4: Students taking the path from Palaiokastro back to Gialova lagoon

- “Course in Air Pollution”
Bachelor students’ course, Physics Department, University of Patras, Greece (December 10-11)

The 4th year students of the Physics Department, University of Patras that followed the course on "Atmospheric Pollution" had the chance to visit Navarino Environmental Observatory (NEO) at Pylos, Greece and received a 2-days training course on air pollution. They visited the air pollution station at Methoni, followed lectures about the air pollution characteristics of the area, the measurement methodologies, the quality control and assurance procedures of the station instrumentation and delivered projects based on the air pollution and meteorological measurements at NEO. In addition to the above mentioned, Myrto Gratsea - a PhD student at the National Observatory of Athens (NOA) - gave a lecture about remote sensing technics (MAX-DOAS & MFR).



Figure 5: Happy students in front of NEO building.

Dissemination

- **Scientific Publications**

Holmgren, K, Sicre, M.-A. , Gogou, A, Xoplaki, E and Luterbacher, J. 2014: Mediterranean Holocene climate and human societies. Workshop report. *Past Global Changes Magazine*, 22 (2), 54

Finné, M. 2014: Climate in the eastern Mediterranean during the Holocene and beyond – A Peloponnesian perspective. PhD thesis. Department of Physical Geography and Quaternary geology, Stockholm University.

- ‘4th ARCH_RNT Symposium, Archaeological Research and New Technologies’
University of Peloponnese, Kalamata 1-3 October

NEO film, ‘**Natural archives reveal climate history and more...**’ was shown at the 4th ARCH_RNT Symposium. Giorgos Maneas also presented the preliminary results from our research related to Palaeoenvironmental Reconstruction of SW Peloponnese. The Symposium was organized by the Laboratory of Archaeometry, Department of History, Archaeology and Cultural Resources Management, University of the Peloponnese led by Ass. Professor Nikos Zacharias.

- **'Cultural Landscapes in Natura 2000 sites: towards a new policy for the integrated management of cultural and natural heritage'**
Athens and Lake Stymfalia, 10-11 October
Karin Holmgren and Vasilis Karakousis participated in an International Meeting organized by the Piraeus Bank Group Cultural Foundation.
- **Cafe-NEO - 'The astronomical explanation of the Christmas star',**
Kalamata, December 22
The first 'cafe-NEO' meeting for 2014-2015, took place at Vino-banco Tapas bar in Kalamata. The attendees had the opportunity to discuss with Dr. Fiori Metallinou - researcher at the Institute of Astronomy, Astrophysics, Space Applications and Remote Sensing, National Observatory of Athens – the most popular scientific explanations regarding the origin of the Christmas star and take an imaginary journey into space.



Figure 6: Cafe-NEO at Vino-banco Tapas bar in Kalamata

- **Interviews**
NEO station, November

Giorgos Maneas was interviewed by Geordie Torr, editor at large, for the Geographical Magazine of the Royal Geographical Society.

NEO management

The NEO Steering Committee was held at NEO in October. In connection to the SC meeting, the Vice-Chancellor of Stockholm University, Astrid Söderbergh Widding, and the Dean of the Faculty of Science, Anders Karlhede visited NEO and Costa Navarino for discussion on the future cooperation and a new agreement for the continuation of NEO operation for the coming 5 years was agreed upon.

Upcoming

Research

- Measurements of trace element variations in stalagmites will be made at the Max Planck Institute for Chemistry, in Mainz, Germany in collaboration with Dr. Klaus Peter Jochum and Dr. Denis Scholz. Following those results, Meighan Boyd, aims to form the basis for the climate record from Alepotrypa Cave.
- We will perform a field work in Gialova lagoon between 7 and 14 February 2015. The main goal is to carry out successive coring along cross-section which will allow us to determine more precise the lithology/subsurface sediment patterns and major changes in paleoenvironment during the Holocene period.
- Johan kleman and Ingmar Borgstrom will finalise the Taygetos paper in the spring and are planning a new field visits in the mountains in early autumn
- Barbara Kleine will defend her Ph. D. on April 28, 2015 while Ruben Fritzon will defend his Ph. Lic. on June 5, 2015.

Education

- The Physical Geography course will take place at NEO on February 2015. During the excursion the course will visit a number of different sites mainly in Messinia among them, the Gialova/Navarino Bay area, Artemisia, Verga, Loussios River, Kapsia Cave, Mesochori, Methoni and Finikounda.

Events

- The **Fleur-network** workshop will be held at NEO at the beginning of March 2015. The workshop is organized by Sara Cousins, Professor in Landscape Ecology, Stockholm University.

Dissemination

- The **Café-NEO** meetings, organized by Navarino Environmental Observatory, will take place at several coffee shops in the Peloponnese as well as at University canteens, with a range of topics such as “Why Messinia? From Homer to Spielberg” or “How to educate your kids to respect nature