



Università  
degli Studi  
di Palermo

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Stratigraphy & Chronology  
(SACCOM)



International Commission on Stratigraphy  
Subcommission on Quaternary Stratigraphy



AIQUA

Associazione Italiana per lo Studio del Quaternario  
Italian Association for Quaternary Research

## INQUA-SQS International Field Workshop



Symposium: Palazzo Steri, 1–2 September, 2021

Field Trip: 3 September, 2021

**Third Circular**



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### Scope:

This meeting addresses the core mission of both INQUA-SACCOM and SQS: to promote Quaternary research and involve international multidisciplinary expertise. The topic of this field workshop is the Neogene–Quaternary transition, with a focus on the spectacular Monte San Nicola outcrop, Gela, Sicily, which serves as the GSSP for the Gelasian Stage, Lower Pleistocene Subseries, Pleistocene Series, and Quaternary System. Participation of early career researchers is welcomed and encouraged. The field workshop aims to assemble a research team and inaugurate a project (“Gelstrat”) for revisiting the Gelasian stratotype using a very high-resolution multi-proxy approach, in order to reconstruct in detail the climatic history across one of the most critical intervals of Earth history.

The two days of the Conference will be devoted to oral presentations and posters, and the third day to a geological field trip that focus on the GSSPs of the Zanclean, Piacenzian (Capo Rossello), Gelasian, and Calabrian stages (Monte San Nicola) of the Plio-Pleistocene. From 4<sup>th</sup> to 6<sup>th</sup> September, 10 scientists will sample the lowermost part of the Gelasian Stage collecting hundreds of samples to study paleomagnetism, geochemistry, foraminifera, nanofossils, dinocysts and pollens.

### Organizers

*Antonio Caruso, Martin J. Head, Adele Bertini, Maria Marino.*

### Scientific Committee:

*Antonio Caruso, Adele Bertini, Sergio Bonomo, Isabel Cacho, Luca Capraro, Patrizia Ferretti, Martin J. Head, Timothy Herbert, Fabrizio Lirer, Patrizia Maiorano, Maria Marino, Lewis Owen, and Giovanna Scopelliti.*

**Local Host** (logistics, and field excursion coordinator): Università degli Studi di Palermo

Dipartimento di Scienze della Terra e del Mare (DiSTeM)

via Archirafi 20–22, 90123 Palermo

*Prof. Antonio Caruso*

email [antonio.caruso@unipa.it](mailto:antonio.caruso@unipa.it)

*Dr. Claudia Cosentino*

email: [claudia.cosentino@unipa.it](mailto:claudia.cosentino@unipa.it)

*Athina Tzevahirtzian*

email: [athina.tzevahirtzian@unipa.it](mailto:athina.tzevahirtzian@unipa.it)

### General information

The workshop will be held in Palermo at the “Sala delle Capriate” in a beautiful historical Palace built in the 14th century (Palazzo Chiaramonte-Steri). The registration is free but, due to the pandemic situation, the capacity of the hall was reduced to 40 participants. The organization has also activated a virtual room using the Microsoft Teams software, in order to allow a larger participation of scientists.

The virtual room is: **GELSTRAT SYMPOSIUM – Palermo 1-3 September 2021**

[https://teams.microsoft.com/l/meetup-](https://teams.microsoft.com/l/meetup-join/19%3ameeting_NjVkJ2MxMDktNmVkJi00M2QzLWlzNDItM2I0NTY3NmJhYWU4%40thread.v2/0?context=%7b%22Tid%22%3a%22bf17c3fc-3ccd-4f1e-8546-88fa851bad99%22%2c%22Oid%22%3a%2210fad3f3-a508-4cbb-aab7-5247b651eaaf%22%7d)

[join/19%3ameeting\\_NjVkJ2MxMDktNmVkJi00M2QzLWlzNDItM2I0NTY3NmJhYWU4%40thread.v2/0?context=%7b%22Tid%22%3a%22bf17c3fc-3ccd-4f1e-8546-](https://teams.microsoft.com/l/meetup-join/19%3ameeting_NjVkJ2MxMDktNmVkJi00M2QzLWlzNDItM2I0NTY3NmJhYWU4%40thread.v2/0?context=%7b%22Tid%22%3a%22bf17c3fc-3ccd-4f1e-8546-88fa851bad99%22%2c%22Oid%22%3a%2210fad3f3-a508-4cbb-aab7-5247b651eaaf%22%7d)

[88fa851bad99%22%2c%22Oid%22%3a%2210fad3f3-a508-4cbb-aab7-5247b651eaaf%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_NjVkJ2MxMDktNmVkJi00M2QzLWlzNDItM2I0NTY3NmJhYWU4%40thread.v2/0?context=%7b%22Tid%22%3a%22bf17c3fc-3ccd-4f1e-8546-88fa851bad99%22%2c%22Oid%22%3a%2210fad3f3-a508-4cbb-aab7-5247b651eaaf%22%7d)

*To avoid any technical problem, it is important to make sure that the camera is turned off.*



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### Location Palazzo Steri

A guided tour of Palazzo Steri Museum has been organized after the lunch of September 2, at the price of 12 euros. During the registration, please communicate your participation at the secretary.

Palazzo Chiaromonte, known as the “Steri”, is located in the Piazza Marina and is one of the symbolic places of the city of Palermo. It contains seven centuries of art and history of Sicily and is the first example of the new architectural style that appeared in Sicily at the beginning of the 14th century, the style, called *chiaromontano*. Elegant and solemn, the palace is enriched by splendid colonnades and beautiful mullioned and triple mullioned windows. The construction of the building was started by Giovanni Chiaromonte in the first half of the fourteenth century and was the home of Manfredi I, count of the immense and powerful fief of Modica. The place of construction, in the Kalsa district, was chosen for its proximity to the sea and the quality of the building land: a rocky ridge adjacent to the port, in front of the bend covered by marshes in the area on which Piazza Marina stands today. The noble family reached the apogee of power with Manfredi III, admiral, vicar and duke of Gerba, who between the seventies and eighties of the 14th century commissioned the extraordinary wooden ceiling of the Sala Magna, a true medieval history treatise restored at the end of 2019, just before the outbreak of the pandemic. But the Chiaromonte family did not last long: after the arrival in Sicily of King Martin the Younger, his father Martino the Elder and Queen Maria, the family was overthrown and in 1392 Andrea Chiaromonte was accused of treason and beheaded. It is the end of the dynasty, Enrico Chiaromonte will leave Sicily forever in 1397.

The residence was conceived as an imposing cube with three elevations (the last of which remained unfinished) with a central square courtyard surrounded by a two-level loggia. After the confiscation of the assets of the Chiaromonte, the palace became the viceregal seat between 1468 and 1517, to be then assigned to new institutional functions. In the following centuries, between 1601 and 1782, it was the seat of the Spanish Inquisition, a period in which the prisons and torture cells on the lower floor were built a real scream of pain that is now part of the system of visits to the Steri then the seat of the Customs Office, of the Courts of the Kingdom. It was acquired in 1967 by the University of Palermo, which in 1972 entrusted the restoration to a team of architects [Roberto Calandra, Camillo Filangeri, Nino Vicari] with the consultancy provided by Carlo Scarpa until 1978 (the year of his death). The latter managed to sign a modern, conservative recovery, which only included materials compatible with the historical era and ingenious solutions to heal damage from previous interventions.

### Coffee Breaks and Meals

In the afternoon of August 31, an Ice Breaker Party (6:30-8:30 p.m.) has been organized at NAUTOSCOPIO, in the Cala of Palermo. Please send a mail to Athina Tzevahirtzian ([athina.tzevahirtzian@unipa.it](mailto:athina.tzevahirtzian@unipa.it)) by August 30 to confirm your participation.

Coffee breaks will be outside the Palazzo Steri (Bar Casa Obatalà) and the price is 5 Euros, while meals will be 20 Euros (restaurant near Palazzo Steri). During the registration, please communicate to the secretariat if you will participate in the lunches explaining intolerances and allergies. A social dinner will take place on Wednesday, September 1 (max 30 Euros).

### Field Trip

Transport by bus for the field trip will be provided by the organization. Appointment in front of the Botanical Garden (via Lincoln 2, Palermo) on September 3, at 7:50 a.m., departure at 8:00 a.m. (lunch bag). You need comfortable outdoor shoes, please pay attention that temperature will be comprised between 28 and 34°C. In Capo Rossello you will have the opportunity to swim during the lunch.



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**IMPORTANT NOTE:** please send a mail to Athina Tzevahirtzian to confirm your participation to the field-trip, and if you participate with the bus of the organization because due to the pandemic situation the Bus will travel at 50% of capacity.

Scientists that will participate to the sampling and will remain up to September 7, will stay in Gela at Hotel Villa Peretti or in B&B, while other participants will return to Palermo by bus (arrival at 7:00 p.m., at via Lincoln 2, Palermo).

### Logistics

For transfer from Palermo Airport to hotels, use public transportation (bus - Prestia & Comandè, 6.50 Euros), The box office is inside the airport close the exit. Taxis (35 Euros) or collective taxis (7 Euros) are in front of the exit. The box office of the collective taxis is close to the bus terminal.

### Posters

Poster (cm 70 high x cm 100 wide) will be exposed during the entire meeting near the workshop site at Palazzo Steri

Red circle indicates the location of Palazzo Steri, the venue for the symposium.





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## Participants

**Maria Addante**, Dipartimento di Scienze Della Terra e Geoambientali, Università di Bari Aldo Moro, Italy  
**Nadia Ben Moktar**, Département de la Terre, Faculté des Sciences de Gabes, Tunisie  
**Adele Bertini**, Dipartimento di Scienze della Terra, Università di Firenze, Italy  
**Sergio Bonomo**, CNR-IGAG, Italy  
**Laura Borzì**, Dipartimento di Scienze Biologiche, Geologiche ed Ambientali, Università di Catania, Italy **(VIA WEBINAR)**  
**Isabel Cacho**, Departament de Dinàmica de la Terra i de l'Oceà, Universitat de Barcelona, Spain  
**Lucilla Capotondi**, CNR-INAF, Italy **(VIA WEBINAR)**  
**Luca Capraro**, Dipartimento di Geoscienze, Università di Padova, Italy **(VIA WEBINAR)**  
**Antonio Caruso**, Dipartimento di Scienze della Terra e del Mare, Università di Palermo, Italy  
**Claudia Cosentino**, Dipartimento di Scienze della Terra e del Mare, Università di Palermo, Italy  
**Natale Maria D'Andrea**, Dipartimento di Scienze Biologiche, Geologiche ed Ambientali, Università di Catania, Italy  
**Simone Da Prato**, Istituto di Geoscienze Georisorse - CNR, Italy **(VIA WEBINAR)**  
**Agata Di Stefano**, Dipartimento di Scienze Biologiche, Geologiche ed Ambientali, Università di Catania, Italy  
**Patrizia Ferretti**, Dipartimento di Scienze Ambientali, Informatica e Statistica, Università Ca' Foscari, Venezia, Italy  
**Luca Foresi**, Dipartimento di Scienze Fisiche, della Terra e dell'Ambiente, Università di Siena, Italy  
**Phil Gibbard**, Department of Geography, Univeristy of Cambridge, UK **(VIA WEBINAR)**  
**Angela Girone**, Dipartimento di Scienze Della Terra e Geoambientali, Università di Bari Aldo Moro, Italy  
**Martin J. Head**, Department of Earth Sciences, Brock University, Canada  
**Timothy Herbert**, Institute at Brown for Environment and Society, Brown University, US  
**Frits Hilgen**, Department of Earth Science, University of Utrech, The Netherlands **(VIA WEBINAR)**  
**Fabrizio Lirer**, ISMAR Istituto di Scienze Marine - CNR, Italy  
**Patrizia Maiorano**, Dipartimento di Scienze Della Terra e Geoambientali, Università di Bari Aldo Moro, Italy  
**Maria Marino**, Dipartimento di Scienze Della Terra e Geoambientali, Università di Bari Aldo Moro, Italy  
**Greta Militello**, Dipartimento di Scienze della Terra e del Mare, Università di Palermo, Italy  
**Kenneth G. Miller**, Department of Earth and Planetary Science, Rutgers University, US  
**Gabriele Niccolini**, Dipartimento di Scienze Della Terra e Geoambientali, Università di Bari Aldo Moro, Italy  
**Lewis Owen**, Department of Marine, Earth, and Atmospheric Sciences, North Carolina University, US **(VIA WEBINAR)**  
**Monica Pernice**, Dipartimento di Scienze Fisiche, della Terra e dell'Ambiente, Università di Siena, Italy  
**Wieslawa Violka Radmacher**, Polish Academy of Sciences, Institute of Geological sciences, Research Center in Kraków  
**Andrew Roberts**, Research School of Earth Sciences, The Australian National University, Canberra **(VIA WEBINAR)**  
**Francesco Sciuto**, Dipartimento di Scienze Biologiche, Geologiche ed Ambientali, Università di Catania, Italy  
**Giovanna Scopelliti**, Dipartimento di Scienze della Terra e del Mare, Università di Palermo, Italy  
**Quentin Simon**, CEREGE UM34, Aix Marseille Univ., CNRS, France **(VIA WEBINAR)**  
**Housseem Tabbabi**, Département de la Terre, Faculté des Sciences de Gabes, University of Gabes, Tunisia  
**Charles Turner**, Quaternary Environments Group, University of Cambridge, UK **(VIA WEBINAR)**  
**Sergi Trias-Navarro**, Departament de Dinàmica de la Terra i de l'Oceà, Universitat de Barcelona, Spain  
**Athina Tzevahirtzian**, Dipartimento di Scienze della Terra e del Mare, Università di Palermo, Italy  
**Zalaszewicz Jan**, School of Geography, Geology and the Environment University of Leicester, UK **(VIA WEBINAR)**



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## INQUA -SACCOM GELSTRAT SYMPOSIUM Final Program

### 31<sup>th</sup> August 2021

Welcome in Palermo - Ice Breaker Party

18:30-20:30 (Nautoscopio – LA CALA, Palermo)

### 1<sup>th</sup> September 2021

**Palazzo STERI – Sala delle Capriate (2nd floor), Piazza Marina, 61 - 90133 Palermo**

8:30-9:00

Registration

9:00-9:40

Welcome and Introduction

**Prof. Fabrizio Micari - Rector of Palermo University**

**Prof. Antonio Caruso – coordinator of the GELSTRAT SYMPOSIUM**

**Prof. Martin Head – Vice-Chair: ICS Subcommission on Quaternary Stratigraphy (INQUA)**

**Athina Tzevahirtzian – logistic**

9:40-10:20

**Martin J. Head**

The Global Boundary Stratotype Section and Point (GSSP) for the Gelasian Stage, Lower Pleistocene Subseries, Pleistocene Series, and Quaternary System at Monte San Nicola, Sicily

10:25-10:55 Coffee break (Bar Casa Obatalà)

11:00-11:40

**Kenneth G. Miller\***, J. Browning, W.J. Schmelz, R. E. Kopp, G.S. Mountain, J.D. Wright

**(\*Chair Subcommission on Neogene Stratigraphy of the International Commission on Stratigraphy)**

A Neogene perspective of Plio-Pleistocene sea-level and cryospheric evolution from deep-sea geochemical and continental margin records

11:40-12:20

**Timothy D. Herbert**, Rocio Caballero-Gill, Antonio Caruso

The Mediterranean Rosetta Stone and the onset of Northern Hemisphere Glaciation

12:20-13:00

**Isabel Cacho**, L. Pena, A. Català, M. de la Fuente<sup>1</sup>, M. Selvaggi, G. Margaritelli, F. Lirer

Application of Mg/Ca ratios in foraminifera shells to trace past changes in Mediterranean thermohaline circulation

13:00-13:15

Discussion



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13:15-15:00 Lunch (Piazza Marina)

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15.00-15.30

**Adele Bertini**

Vegetation and climatic changes in the Mediterranean area during the Neogene–Quaternary transition

15:30-16:00

**Patrizia Maiorano**, M. Marino, M. Addante

Calcareous nannoplankton at the Pliocene-Pleistocene transition: background and future perspective

16:00-16:20

**Monica Pernice**, A. Caruso, F. Lirer, I. Cornacchia, S. Agostini, L.M. Foresi

CO<sub>2</sub> oscillations during the Plio-Pleistocene Transition: an overview based on boron isotopes in planktonic foraminifera as a tracer for paleo-pH and pCO<sub>2</sub>.

16:20-16:40

Discussion

16:40-20:00

Palermo UNESCO Tour

20:00

Free dinner

**2<sup>th</sup> September 2021**

**Palazzo STERI – Sala delle Capriate (2nd floor), Piazza Marina, 61 - 90133 Palermo**

9:00-9:30

**Antonio Caruso**, C. Cosentino, G. Scopelliti, T. Herbert

Response of the foraminiferal assemblages to climate oscillations during the Gelasian Stage: Data from Capo Rossello

9:30-10:00 (VIA WEBINAR)

**Luca Capraro**, S. Bonomo, A. Di Stefano, P. Ferretti, E. Fornaciari, S. Galeotti, A. Incarbona, P. Macrì, I. Raffi, N. Sabatino, F. Speranza, M. Sprovieri, E. Di Stefano, R. Sprovieri, D. Rio

The Monte San Nicola section revisited: a potential Unit-stratotype of the Gelasian Stage

10:00-10:30 (VIA WEBINAR)

**Frits Hilgen**

The Monte San Nicola section as potential astro-unit-stratotype for the Gelasian

10:35-11:05 Coffee break (Bar Casa Obatalà)

11:10-11:40

**Martin Head and Antonio Caruso**

Strategies for the sampling of the Monte San Nicola GSSP



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11:40-13:00

Open Discussion, next strategies for future projects and conclusions

#### Poster session

**Sergi Trias-Navarro**, I. Cacho, L.D. Pena, M. De la Fuente, A. Català, J. Frigola, E. Paredes, E. Garcia-Solsona, A. Caruso, F. Lirer.

Water-masses exchange through the Strait of Sicily during the last Deglacial and Early Holocene

**Housseem Tabbabi**, Ezzedine Saïdi, Nadia Ben Moktar, Salah Mahmoudi

Biostratigraphy and paleoecology of the Pliocene-Pleistocene transition in Northern offshore Tunisia

13:00-15:00 Lunch (Piazza Marina)

15:00-16:00

Guided Tour of the "Palazzo Steri Museum" (12 Euros)

16:15-17:30

Ice Cream and Granita in Palermo

20:30

Social Dinner

### 3<sup>th</sup> September 2021

#### Field trip: Capo Rossello-Punta Piccola-Monte San Nicola (Gela)

7:50 a.m.: Appointment in front of the Botanical Garden (via Lincoln, 2 Palermo)

8:00 a.m.: Departure from Palermo

7:00 p.m.: Return to Palermo





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Capo Rossello (Zanclean Stage, Lower Pliocene Subseries, Pliocene Series).



Monte San Nicola section (GSSP for the Gelasian Stage, Lower Pleistocene Subseries, Pleistocene Series, and Quaternary System).





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## COVID-PROTOCOL (GELSTRAT)

1. The participants must have a GREN PASS; those who will come from other EU countries or Canada and the United States should have received the first dose of vaccine at least 15 days before the date of the conference; alternatively, must do A PCR test one or two days before the WORKSHOP.
2. Participants will have the opportunity to do a free PCR test at Palermo airport;
3. Participants from other non-EU countries must contact their embassy in order to have news about preventive quarantine;
4. During the days of the conference, the participants must keep the safety distances respecting all the protocols, and avoiding the physical contact;
5. Before entering the STERI, the temperature will be checked by the concierge staff;
6. Inside the STERI, participants must wear FFP2 masks for the entire duration of the conference;
7. Each participant must provide the FFP2 masks;
8. At the entrance of "CAPRIATE HALL" and during the registration, a distance of at least one meter must be respected;
9. Each participant will receive a bottle of mineral water (50 cl) for personal use. The WORKSHOP secretariat staff will provide bottles of water using disposable latex gloves in order to avoid direct contact.
10. The mask can be lowered outdoors and on the terrace in front of the "CAPRIATE HALL";
11. The seats will be nominally assigned by the conference secretariat and cannot be changed, the names of the participants will be shown on the chairs;
12. The seats will have a distance of at least one meter between them;
13. The mask can be lowered when the speaker talks.
14. Microphones will be disinfected after each single talk.
15. The suspensions for the coffee breaks, lasting 40 minutes, will be held outside the STERI in a nearby bar where all the measures must be respected;
16. Lunch break, lasting about 90 minutes, will be carried out outside the STERI in an open-air restaurant where all the measures must be respected;
17. During coffee and lunch breaks, the Sala delle CAPRIATE will be cleaned and disinfected;
18. The toilet near the CAPRIATE room will be periodically cleaned and sanitized;