	<b>2017 Meeting Report Form</b>  <b>Project Number and Title:</b> IGCP 610 “From the Caspian to Mediterranean: Environmental Change and Human Response during the Quaternary”
	<p style="color: red;"><b>Send to UNESCO and IUGS</b></p> <p style="text-align: center;"> <a href="mailto:ml.faber@unesco.org">ml.faber@unesco.org</a>  <a href="mailto:iugs.beijing@gmail.com">iugs.beijing@gmail.com</a>  <b>by 01/12/2017</b> </p>

## MEETING:

Date: 1-9 October 2017

Place: Palermo, Italy

## SCOPE AND RESULTS OF MEETING:

Title: Joint Plenary Conference and Field Trip of IGCP 610 and INQUA IFG POCAS

Date: 1-9 October 2017

Place: Palermo, Italy

### Itinerary:

**1 October:** Arrival and Registration. Accommodation in Palermo.

**2-3 October:** Technical Sessions. Accommodation in Palermo.

**4 October:** Field Trip 1: Visit of UNESCO Arab-Norman World Heritage, Palermo. Departure to Agrigento. Accommodation in the hotel “Tre Tori”, Agrigento.

**5 October:** Field Trip 2. Hotel “Tre Tori” - Messinian-Lago Mare outcrops and Messinian/Zanclean GSSP. Accommodation in the hotel “Tre Tori”, Agrigento.

**6 October:** Field Trip 3. Hotel “Tre Tori” - Capo Rossello area. Visit to the Turkish Scale and Zanclean/Piacenzian GSSP (Punta Piccola) and Pleistocene outcrop of Faro Rossello. Accommodation in the hotel “Tre Tori”, Agrigento.

**7 October:** Field Trip 4. Hotel “Tre Tori” - Monte San Nicola Gela, Piacenzian/Gelasian GSSP and Gelasian/Calabrian boundary. Accommodation in the hotel “Tre Tori”, Agrigento.

**8 October: Field Trip 5.** Departure from the hotel “Tre Torri” to the Villa del Casale, Piazza Armerina (UNESCO Heritage), and after that to Palermo. Accommodation in Palermo.

**9 October:** Departure from Palermo to respective countries.

### TECHNICAL SESSIONS

#### 2 October 2016

PANEL 1: GENERAL QUESTIONS OF THE CORRIDOR - Moderators: Nikolay I. ESIN (Russia) and Alexander KISLOV (Russia)

PANEL 2: BLACK SEA & SEA OF MARMARA REGION - Moderators: Valentina YANKO-HOMBACH (Ukraine, Canada) and Hayrettin KORAL (Turkey)

3 October 2016

PANEL 3: CASPIAN SEA REGION - Moderators: Tamara YANINA (Russia) and Elmira ALIYEVA (Azerbaijan)

PANEL 4: MEDITERRANEAN REGION - Moderators: Antonio CARUSO (Italy) and Svetlana BORUTSKAYA (Russia)

POSTER SESSION (5 minutes is given to presentation of each poster)

ROUND-TABLE DISCUSSION AND CLOSING OF TECHNICAL SESSIONS - Moderators: IGCP 610 Co-Leaders Valentina YANKO-HOMBACH (Ukraine, Canada) and Tamara YANINA (Russia)

MEETING OF THE WORKING GROUP ON THE INQUA PROJECT “PONTO-CASPIAN STRATIGRAPHY AND GEOCHRONOLOGY, POCAS (2017–2020).

The Program of the conference is enclosed and also available at [http://www.avalon-institute.org/IGCP610/pdf/Programme\\_2017.pdf](http://www.avalon-institute.org/IGCP610/pdf/Programme_2017.pdf)

The Joint Plenary Conference and Field Trip of IGCP 610 and INQUA IFG POCAS was organized jointly by the University of Palermo, Italy, and Avalon Institute of Applied Science, Canada, and hosted by the University of Palermo. The Meeting and Field Trip were held in Palermo and Agrigento, respectively. The Field Trip was focused on the GSSPs of the Zanclean, Piacenziano, Gelasian, and Calabrian stages of the Plio-Pleistocene in the Mediterranean as well as on a number of archaeological sites (Fig. 1).

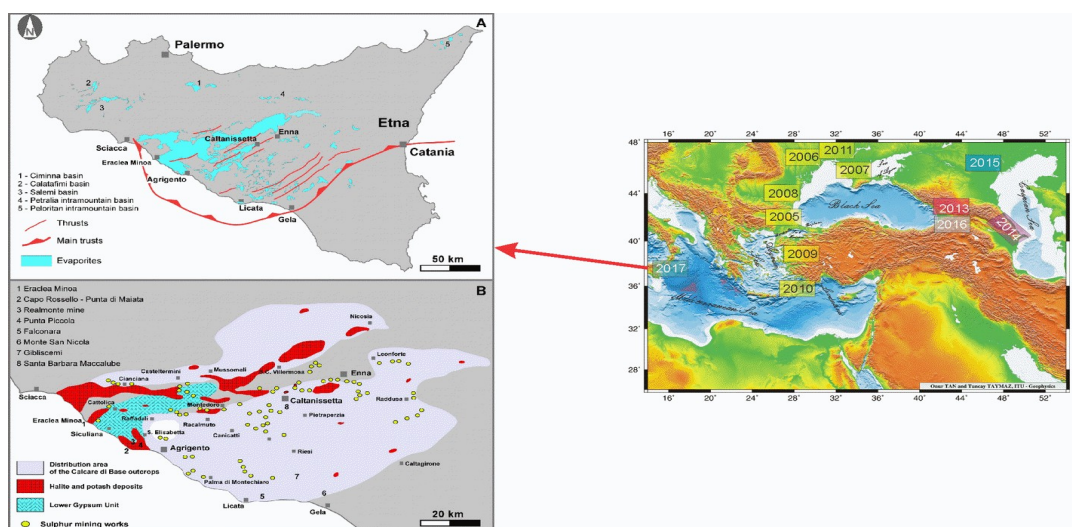


Figure 1. The Caspian-Black Sea-Mediterranean “CORRIDORS” (lower): in yellow are the locations of IGCP 521-INQUA 501 meeting and field trip sites (2005-2011); in other colors are sites to be studied by the present IGCP 601 Project: 2013, 2016 – Tbilisi, Georgia; 2014 – Baku, Azerbaijan; 2015 – Astrakhan (Lower Volga); 2017 – Palermo, Italy. Simplified location maps of the extent of the Messinian evaporitic sediments. A. Extent of the outcrops of Messinian evaporites in the different Sicilian basins with indication of the major structural features. B. Distribution of the “Calcare di base outcrops” and major evaporitic units (Lower Gypsum and Halite units) with indication of most of the sulphur mines and location of the studied sections (from Caruso et al., 2015).

More information about field trips can be obtained from the Field Trip Guide (Enclosed).

### **Achievements of the Meeting**

The Joint Plenary Conference and Field Trip of IGCP 610 and INQUA IFG POCAS made the following possible for the participants: (1) To discuss the actual status of both projects and progress made by participants. Particular attention was paid to scientific approaches for integrating environmental, anthropological, ethnological, and archaeological data in order to trace the history of ancient humans from the Caspian to Mediterranean during the entire duration of the Quaternary. (2) To introduce young scientists, especially from the Eastern countries, to new analytical techniques and state-of-the-art interpretation of data. (3) Encourage east-west dialogue and integrate researchers from different countries into the international R&D community, as well as contribute to the preservation of cultural and religious heritage through the discussion of ancient cultures, civilizations, and their legends.

The two days of Technical Sessions were organized into four panels with 24 Oral presentations.

Panel 1: GENERAL QUESTIONS OF THE CORRIDOR – moderators: Nikolay Esin (Russia) and Alexander Kislov (Russia) – included three ORAL presentations with a key-note talk “Brief history of the astronomical tuning of the Plio/Pleistocene GSSPs outcropping in Sicily (Southern Italy)” given by Prof. Caruso, A.. Two other presentations covered possible social-climatic consequences of changeability of circulation in Hadley’s cell; and global geological processes in the Caspian-Mediterranean region during the Miocene-Pleistocene; given by Italian, Ukrainian, Russian, and Canadian scientists.

Panel 2: BLACK SEA & SEA OF MARMARA REGION – moderators: Valentina YANKO-HOMBACH (Ukraine, Canada) and Hayrettin KORAL (Turkey) – included 15 ORAL presentations that covered a range of topics on the unique marine terrace system of the Crimean and Black Sea Basins: stratigraphy, archaeology, and the oldest Oldowan migrations to Europe (keynote); wave climate variation in the Black Sea; microforaminiferal linings as a proxy for paleodelta and paleosalinity analysis; palynomorphs in surface sediments of the Ukrainian part of the northwestern Black Sea shelf; marine geohazards in the Black Sea and their monitoring; OSL-chronology of the late Quaternary loess-soil series in the eastern Azov Sea region; regional distribution and clay mineralogy of the modern sediments in the northwestern zone of the Black Sea; Late Miocene volcanic ash layers of the intermountain depression of the Eastern Caucasus: the products of the Megacaldera explosion; late glacial to Holocene Black Sea evolution based on microfaunal and stable oxygen isotope records; neotectonics in the Marmara Region; NW Turkey, Narrow shelf canyons vs. wide shelf canyons in the Black Sea; vegetation changes and climate from pollen of the Late Pliocene to Early Pleistocene in the North Caucasus; mud volcanism of the Black Sea region; meiobenthos as an indicator of gaseous hydrocarbon reservoirs under the floor of the Black Sea; and Stone age people in Crimea: an anthropological study; given by Georgian, Turkish, Russian, Romanian, Ukrainian, Canadian, Chinese, and American scientists.

Panel 3: CASPIAN SEA REGION - moderators: Tamara YANINA (Russia) and Elmira ALIYEVA (Azerbaijan) – included four ORAL presentations that covered a range of topics on the tectonics, fluid dynamics, and Caspian Sea level change: geological and environmental aspects (keynote), bionomy of the southern Caspian basin in the Pliocene-Pleistocene; the Northern Caspian Sea: Environmental consequences of the climate change during the Khvalynian epoch (evidence from the boreholes); new results on the chronology of late Pleistocene paleogeographical events of the Northern Caspian Sea (OSL dating); and age of the Paleolithic site Sukhaya Mechetka (Lower Volga region) given by Azerbaijani, Russian, and Turkmenistan scientists.

PANEL 4: MEDITERRANEAN REGION - moderators: Antonio CARUSO (Italy) and Svetlana BORUTSKAYA (Russia) - included four ORAL presentations that covered a range of topics on climate record of Marine Isotope Stage 19 from marine and terrestrial signals in the Alboran and Ionian basins; anthropological characteristics of the adaptation of the Fayoum oasis population (Egypt) in the Greco-Roman period; planktonic foraminifera as proxies of the Holocene climatic

variability (Tyrrhenian, Mediterranean Sea); and paleoclimatic reconstruction from marine records of the central and western Mediterranean area over last five millennia using planktonic foraminifera given by Italian and Russian scientists.

The POSTER session included 29 presentations. Each presenter obtained five minutes to present his or her poster orally. Poster sessions covered a wide range of subjects on the circumstances of paleogeographic formation of the Productive Series basin of eastern Azerbaijan and on the first Pliocene sea level fluctuation; magnetometric and electrometric investigations in the Salsovia submerged archaeological site; the role of coastal geomorphology in interpreting the history of the northern Caspian plain in the late Pleistocene; methods and equipment for conducting field research into surface layer characteristics by sounding in the short-wave range of radio waves in order to study environmental change; the first experience of dendroclimatological research in the eastern part of the Kazakh Upland (Saryarqa); the main stages of vegetation and climate evolution in the Kuban River Delta Region during the last 7.4 ka and their correlation with sea-level fluctuations of the Black Sea; the role of the Black Sea shelf techno-geological system in the integrated management of rational resource use; monitoring of climate oscillations in the Mediterranean Sea over the last two millennia using planktonic foraminifera; dynamics of the Black Sea coast and vertical movements of the shelf in the late Pleistocene-Holocene; integrating high resolution Mid-Pleistocene sea surface temperature and productivity estimates from alkenone proxies with marine and terrestrial climate signals; first discoveries of Oligocene diatomic flora in the section of Pirakashkul (Shamakhi-Gobustan zone); paleoenvironmental reconstructions at the Pleistocene-Holocene boundary in the Black Sea based upon benthic foraminifera; geoacoustic and gas geochemical signs of hydrate presence on the continental slope north-east of the Black Sea; chemical composition of Lower Khvalynian deposits in the Middle and Lower Volga region; small mammal faunas from the Mikulino (=Eemian) marine and liman deposits of the Black Sea; vortices of the Cretan straits of the eastern Mediterranean and the Black Sea shelf; evaluation of geological hazards for the Trans-Caucasus Caspian oil and gas pipelines in the Abul-Samsari volcanic ridge section; hydrogeochemical evolution of limans of the northwestern Black Sea region in connection with the problem of their use as salt sources; sedimentary structure and late Holocene evolution of the coastal embayment on the southeastern coastline of the Crimean peninsula (Black Sea); unknown morphotypes as permanent representatives in the Black Sea anoxic and sulfidic bottom sediments; petrographic description of Chokrak-Spiralis Miocene deposits of Eastern Azerbaijan; Holocene environments of the Volga River Delta: inferred from diatom assemblages in sediments of the Rycha River Channel; correlation of the Late Quaternary sediments of the Eastern Mediterranean and Ponto-Caspian basins; adjustment theory in the study of human responses to global climate change in the Northwestern Black Sea region at the Pleistocene-Holocene boundary; paleogeographic stages of development of the Iranian coast of the Caspian Sea in the Holocene; biodiversity of the Volga River delta mollusks in the Holocene; paleogeography of the Atelian period in the lower Volga region; Apsheron Deposits (Late Early Pleistocene) of the Lower Volga (Astrakhan Arch) given by Romanian, Turkish, Canadian, Ukrainian, Turkmenian, Russian, and American scientists.

The Technical and Poster Sessions were followed by the Round Table that enabled participants to discuss the progress of IGCP 610 and to plan future strategy in running the project. It was decided to ask for one year of the Project extension (if possible with some funding) to summarize Project' activities in a series of selected papers in the next IGCP 610 special volume of the Quaternary International, a paper in Episodes, and organizing the IGCP 610-INQUA POCAS Second Joint Plenary Conference and Field Trip in Istanbul, Turkey, planned for September 30-October 7, 2018.

The five days of field trips (by bus) were led by prominent Italian geologists and archaeologists described above and shown in Fig. 1. For more information see the Field Trip Guide and references in it.

## Outcome of the Meeting

1. The 239-page Proceedings of the Joint Plenary Conference (the content of papers in Attachment 2 to General Report) and Field Trip of IGCP 610 and INQUA IFG POCAS, Palermo, Italy contain contributions from 109 scientists from two continents and 14 countries; 61% of the contributors are from developing countries (Fig. 2). About 50% of participants are female. The conference was characterized by high number of young scientists and students (for names and affiliations of attendees see the Financial Statement).

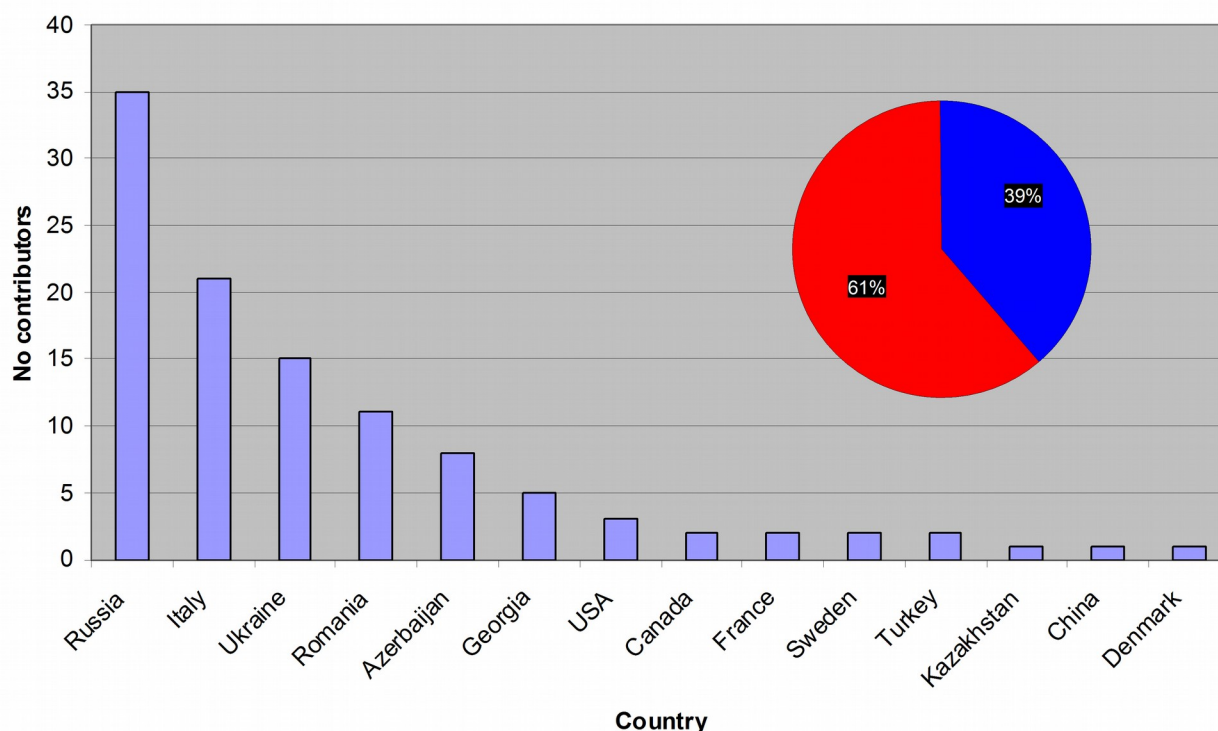


Figure 2. Number of countries and contributors to Joint Plenary Conference and Field Trip of IGCP 610 and INQUA IFG POCAS. The circle shows the percentage of scientists from developing (red) and developed (blue) countries, respectively.

2. The 49-page Field Trip Guide describes the (1) Messinian-Zanclean GSSP that provides a complete sedimentary record from the onset of the MSC up to the restoration of the normal marine conditions in the basal Zanclean and displays the classical succession of the Lower Gypsum, the Upper Gypsum and the “Lago-Mare” deposits. (2) The Capo Rossello area (Southern Sicily, Italy) that represents one of the most beautiful and complete sedimentary successions of upper Messinian to lower Pleistocene, and is particularly suitable for the study of the Plio/Pleistocene boundary. (3) Punta di Maiata that forms a beautiful natural cliff where outcrop calcareous and marly limestones of the Trubi Fm outcrop. (4) Punta Piccola - Zanclean/Piacenzian GSSP. (5) The Gelasian GSSP. (6) The almond field of Monte San Nicola with the local succession: cyclic sedimentation and sapropel clusters. (7) The Nicola bed: a close encounter with the Gelasian GSSP. (8) The Gibliscemi section, 150 m thick that is one the most complete and beautiful section of the Miocene in the Mediterranean basin. (9) Agrigento Valle dei Templi (Valley of the Temple) that is an archaeological area of Sicily characterized by its exceptional state of conservation and a series of important Doric



temples of the Greek period. It corresponds to the ancient Akragas nucleus originating from the city of Agrigento.

3. Special Volume of *Quaternary International* “**IGCP 610 III**” that collected 14 selected articles presented at the Third and Fourth Plenary Conference of IGCP 610.

4. The video film devoted to the Joint Plenary Conference and Field Trip of IGCP 610 and INQUA IFG POCAS in Italy (can be downloaded from <http://dropmefiles.com/imeeW>).

Overall, the meeting provided an excellent opportunity for international discussion of different methods and interpretations used to analyze the history of a huge geographical area from the Caspian to the Mediterranean during the full duration of the Quaternary. It also emphasized the importance of studying the Pre-Quaternary geological history in order to discover a continuity in the development. The meeting encouraged an exchange of data and publications, as well as encouraged future collaboration between physical and social scientists over the Globe. It brought together multidisciplinary scientists from all over the world, and in the process enhanced West-East scientific dialogue by providing a supportive background for collaboration regarding the correlation and integration of discoveries on the influence on humans of climatically/tectonically induced sea-level changes and coastline migration. The meeting encouraged the younger generation to engage in the multidisciplinary study of the region using advanced analytical techniques and methodologies for geoarchaeological investigations.

*Signature of Project Leader and Date*

Co-Leader

Prof. Dr. Valentina YANKO-HOMBACH

Co-Leader

Prof. Dr. Tamara YANINA

*1 December 2017*