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THE EARTH EXPANSION EVIDENCE – A Challenge for Geology, Geophysics and Astronomy
Selected Contributions to the Interdisciplinary Workshop of the 37th International School of Geophysics
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The Earth Expansion Evidence

A Challenge for Geology, Geophysics, Astronomy and General Knowledge

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Abstract. The 37th Workshop of the International School of Geophysics held on 4-9 October 2011 in Erice (Sicily, Italy), was a long awaited occasion which allowed to gather the small scientific community of expansionists. Aims, results, discussions and *varia umanità* of this important event are presented thereafter.

Key words. Earth expansion events

1. The Erice International Workshop

The last century was dominated by the creation of scientific theories: the new principles of Quantum and Relativity theory, and Physical Cosmology are proper examples. The Earth Sciences have followed this trend by proposing the principles of Plate tectonics.

On the contrary, the concept of the Expanding Earth has not been developed as a commonly accepted paradigm, but as an open field of original investigations, interpretations, and results. This innovative attitude is evident in the different interpretations of the Pacific and Indian oceans palaeogeographical evolution; in the cosmological or incidental motor of expansion (still to be identified); in the different estimates of the Earth's radial expansion.

This is a positive sign of vitality: we cannot crystallize these ideas in a few postulates from which we may deduce all the answers, and to which we may constrain all data. The Expanding Earth's concept provides a common explanation of several complex and debated issues relating to Paleontology, Paleomagnetism, Geology and Climatology.

The Workshop of Erice, through oral and poster contributions, covered a wide range of issues in a field that, although supported by compelling evidence, is still in search of a definite and commonly accepted cause for the expansion. Our final goal of exploring the Expanding Earth concept from different scientific perspectives has been achieved.

Some important new entries come from Physics and these can suitably be linked to clues derived from Geodynamics, Paleogeography, Life Evolution, Cosmology ... etc. It can be particularly significant that these progresses in Physics, towards a material physical space, were presented at the

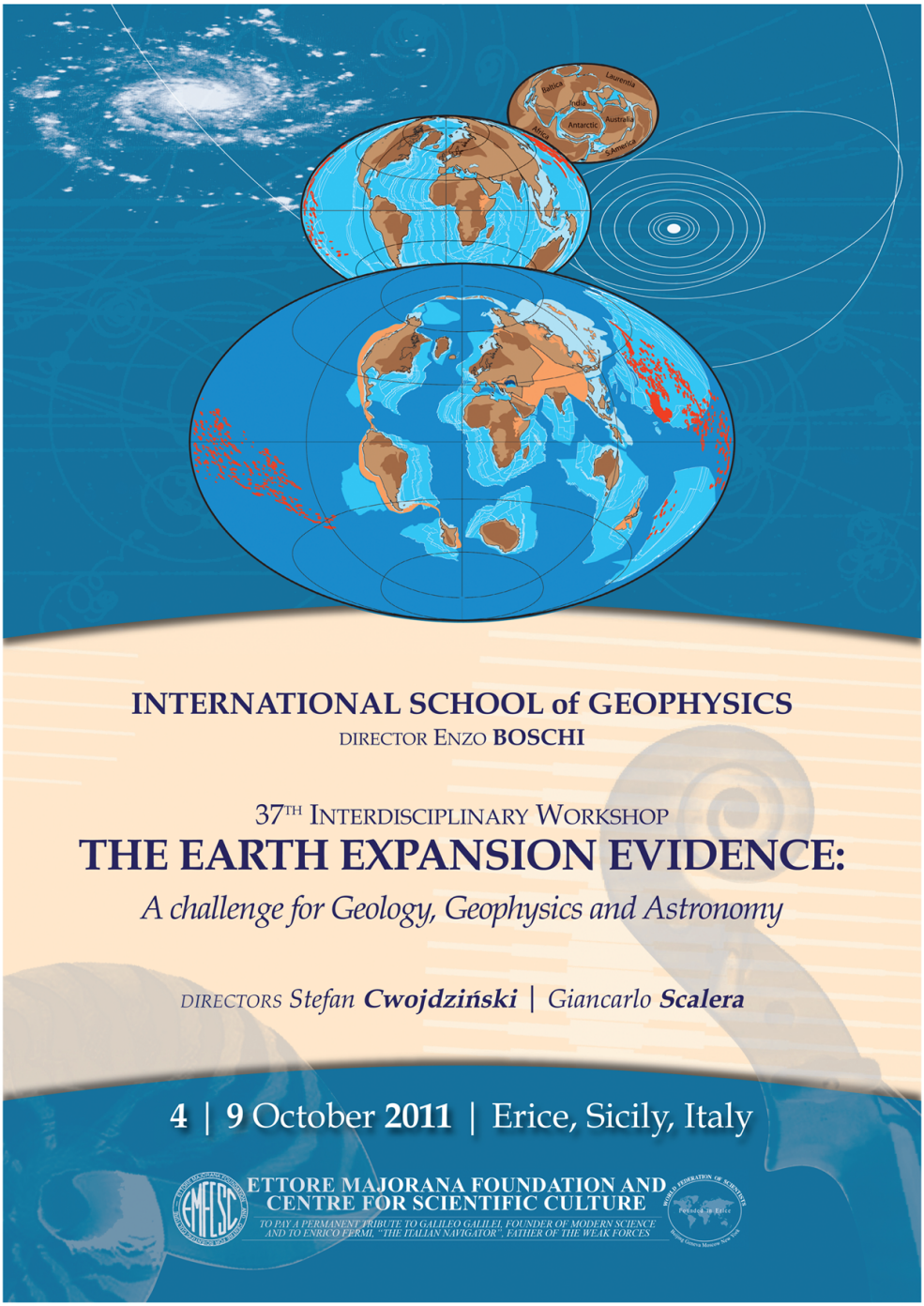

Fig. 1. The Workshop poster (graphic design by Barbara Angioni of the INGV Graphics Lab).

Fig. 2. The expanding Earth community in Erice (photo by Luigi Innocenzi). 1– Vedat Shehu; 2– Mikhail Rodkin; 3– Ewa Cwojdzinska; 4– Andreas Mobron; 5– Sabine Dietrich; 6– Krystyna Cahill; 7– Reginald Cahill; 8– Stefan Cwojdziński; 9– Ian Coziar; 10– Ninel Pavlenkova; 11– Matthew Edwards; 12– Ramin Amir Mardfar; 13– Giancarlo Scalera; 14– Francesco Stoppa; 15– Klaus Vogel; 16– Yahya Shahed; 17– Karl-Heinz Jacob; 18– Silvia Nardi; 19– Tullio Pepe; 20– Giusy Lavecchia; 21– Pierguido Sarti; 22– Espen Hovdenak; 23– Steven Athearn; 24– Daniela Chereches; 25– Clifford Ollier; 26– Karl Strutinski; 27– WenBin Shen; 28– James Maxlow; 29– Volkmar Müller; 30– Anita Maxlow; 31– Richard Guy; 32– Janetta Ollier.

Ettore Majorana Centre, if we consider that the uncle and mentor of Ettore Majorana was Quirino Majorana, a physicist who carried out several experiments (sometimes helped by his nephew Ettore Majorana) with a view to revealing the material essence of gravitation.

A group of researchers working in Geodesy, Oceanography and Seismology, has enthusiastically accepted our invitation to present a series of lectures to our community in order to clarify the limits derived from geodetic and geophysical constrains and to show up the best practicable roads that expansionists should take into account in their new interpretations.

The Workshop represented a unique multidisciplinary opportunity for participants to share ideas and promoting the meeting of minds, but also, and particularly, the cradle of new and original ideas, possibly destined to become the broadly accepted concepts in the future, in a more culturally perceptive environment.

The decision to publish a volume of "*Selected Contributions*" has been unanimously made by the directors of the Workhop, to keep track of progress achieved in the Expanding Earth Theory, and also of the discussions that take place within the community, maybe not quite so explicitly.

2. The Earth Expansion Evidence selected contribution book

The *Selected Contributions Book* has been divided into 9 parts, grouping papers presenting similar topic areas. An old friend of expansion tectonics, Jovan Stöcklin, would have been happy to contribute a paper to this volume, but sadly he passed away in 2008. Therefore, we asked to the President of the *Nepal's Geological Society*, Prof. Jagadish N. Shrestha, permission to reprint the last work of Jovan published in the *Journal of Nepal Geological Society* (2008, Vol. 38, pp. 49-54). The critical examination of the situ-

ation in the modern Earth Sciences made by Stöcklin is exactly the type of writing that could serve as a preface to a collective book on the foundations of Geosciences. We therefore entitled the section "LIKE A FOREWORD", and decided to print his paper beside a self-biographical sketch of Stöcklin that his widow Elisabeth had preserved.

The section of the book "GENERAL TOPICS" collects papers of general interest, long and short reviews on fundamental topics of the Expanding Earth concepts. Among the central topics of the predominance of extensions, tectonic stresses and other structural evidence (Ollier, Cwojdziński, Pavlenkova) there is the subduction concept, which is discussed differently by each author. If someone admits the real existence of subduction zones (Owen, Perin), others reject completely this concept (Vogel, Maxlow; among others), while others consider acceptable under- and over-thrusts limited to a few tens of kilometres, and reject – based on geophysical evidence – the large scale subduction of hundreds of kilometres (e.g. Scalera).

The section "PHYSICS & COSMOLOGY: WHY EARTH IS EXPANDING?" may help the reader to enhance the knowledge of the problems that connect Geosciences to Physics, Astronomy and Cosmology. The outstanding topic of the role that the underlying ether, the material space, the quantistic and sub-quantistic milieu can have in causing the expansion of the Earth and of the heavenly bodies and their evolution, is the multi-facets subject of the papers by Blinov, Cahill, Edwards, Michelini, Scalera – all of them are walking on the good track opened indeed more than 120 years ago by Ian Yarkovski. Additional general discussions and new hypotheses about possible causes are provided by Kokus, Müller, Myers and Shehu.

"GEOLOGIC AND GEOPHYSICAL EVIDENCE" supporting the Earth expansion theory are provided in this part, using both regional and global arguments, in the contributions of Cwojdziński, Kochemasov, Mele, Ollier, while a more philosophically oriented discussion is provided by the short note of Morris. The paper of Morris focuses on the criteria adopted by the scientific community to select which of the emergent arguments and evidence have to be considered as "crucial" in view of the elaboration of a new paradigm in Earth sciences.

The papers published in "GRAVITY, EXPANDING EARTH AND EVOLUTION OF LIFE" provide a rare occasion to be informed about the very often disregarded mutual links among global geodynamics, local gravitational acceleration g and long term evolution of life. This part consists of three reviews, respectively by Hurrell, Mardfar and Strutinski – three different approaches to this topic based on different data, details and cultural roots.

Fig. 3. Participants in the 37th School of Geophysics lined up along the famous stairs in the internal courtyard of the San Rocco building (photo by Alessandro Noto). The globes belong to the collection of Klaus Vogel.

The "PROBLEMS COMING FROM GEODESY" are explained and discussed in this part. Like a musical counterpoint, the arguments of Geodesists – Devoti and colleagues, and Sarti – who try to show both the technical and methodological limits of their discipline with respect to the expanding Earth possibility, and their evaluation of the maximum expansion rate, are compared with the central arguments developed by the followers of expansion tectonics, who argue for a subtle and unrecognized presence of circular procedures in the geodetic computations.

The collected papers on "GEOCHEMISTRY, ORIGIN OF ORE DEPOSITS AND HYDROCARBONS" provide additional confirmation to the non-neutrality of Science in general, and of Geodynamic concepts in particular, regarding the complex economic problems resulting from the use and exploitation of ore and energy resources. Evidence supporting generally disregarded facts, hypotheses and phenomena that should be reevaluated in Geosciences are described by Gottfried and by Jacob & Dietrich. The first author adopts a more general and theoretical approach, while the two other authors, through a complementary set of experimental results, affirm the importance of synergetic phenomena in Earth sciences, leading to a series of processes of "self-organization". A huge amount of data and their analysis allow Sakhno to propose a more realistic principle explaining the origin of the impactites in the El'gygytgyn crater. The relation between Expanding Earth and ore and hydrocarbons deposits is studied by Maxlow, Rodkin & Shatakhtsian and by Scalera. Dilatational tectonics can offer, in a near future, more accurate understanding and, consequently, a more balanced assessment of ore and energy resources.

The last section of the book, "NATURAL DISASTERS PREVENTION", was added at the last minute. It consists of a work that can be considered, although not conclusive, as a first approach of the Expanding Earth to the problems that dramatically involve the Civil Defence Authorities when managing major disasters or emergencies.

3. The unity of the culture

The expanding Earth has been since the beginning developed by people coming from fields not exactly of geosciences. Ivan Osipovich Yarkovsky was an engineer of wide cultural interests, and some contributes of him are of common use also in astronomy. Roberto Mantovani was a violinist that proposed many new ideas in Earth sciences, with additional cultural incursions in ethnology and languages science. Ott Hilgenberg was not only versed in exact sciences, but also in visual arts, as testified by the sculpturesque beauty of his globes and his oil-on-canvas selfportrait.

Women have lived beside many of expansionists, giving their artistic contribute to both the private cultural environment and the practical help in the realization of the works of their relatives.

The wife of Mantovani, Anna Piet, was a pianist, the wife of Carey, Austral, was a high level oil-painter specialised in portraits, and a painting representing Sam was performed. We hope that in future it will be conserved in an Australian Cultural Institution or Museum. The wife of Owen helped him in the graphical realization in Indian ink of the palaeogeographical maps of the famous *Atlas of continental displacement*.

Helge Hilgenberg is an artist in the field of graphics. She has honoured the father by writing an historical note on the book *Why expanding Earth?* in 2003. Nearly every year, Helge draws wonderful postcards with Christmas and/or New Year greeting pictures, and one of them (see Fig. 4) is inspired to a famous paleoglobe of O. Hilgenberg with the characteristic transform-fault that crosses North America.

Anita Maxlow was actively involved in providing the final graphical and artistic touch to the series of paleoglobes of James.

The inverse transferring – from science to arts – is also often occurred. Mantovani

Fig. 4. Greetings for a happy and prosperous New Year from Helge Hilgenberg.

tried to convert into musical chords the periods of revolution of the inner and outer planets. May be that these chords were used to generate more complex musical compositions, but up to the present time his scores must be considered as lost. If his scores still exist, we hope for a future possible recovering of them.

René Paresce at the beginning of the last century was for a long time undecided between physics (he got a university degree and a proposal to become full Professor at the University of Palermo, Sicily) and painting. Having decided in favour of art, he became one among the promoters of the Italian group of painters in Paris (Carrà, Modigliani, De Chirico ...) and to the Venice's Biennial. A more or less aware transferring of his meditations about the laws of Universe appears in some of his oil painting: the ellipses and their transformation into spirals (e.g. the shrimps in the still-life) constitute a clear message about unsolved problems in cosmology.

Recently, Tullio Pericoli has realised a number of drawings and paintings with implicit or explicit connections to the Earth. Some of them became official images of the workshop of Erice, beside to some images coming from the vast production of *acquaforte* and oil paintings of the late Renato Bussi, versed in expressing philosophical and naturalistic subjects.

Finally, Stefano Ferracci and Laura Migotto, two artists in the field of graphics and painting, on suggestion of G. Scalera have realised the cover image of this book – "*The drawers-Earth*" – that, maybe, somebody will recognize as inspired to a classic antique globe conserved in a private collection in Vienna.

As a tribute to all the aspects of this indispensable humanistic culture – so often or ever infused in the sciences – the beginning of each of the parts of this book is adorned with an artistic image.

But already a tribute to arts was paid during the Workshop with the visit to the *Oratorio of San Lorenzo*, in Palermo, that contains masterpieces of the sculptor Giacomo Serpotta (1656-1732), credited to be comparable to Michelangelo. In the same day, the caducity of all the things was meditated during the visit to the *Catacombe dei Cappuccini*.

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