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26 мая
2018 г.



II. THE CONTENT OF THE LOH-HYPOTHESIS

The hypothesis consists of two independent sub-hypotheses describing the following consecutive processes that had proceeded in the young-Earth's history:

(1) Formation of hydrocarbon-hydrates in the Earth's crust and

(2) LASE origination accompanied with the start of the Earth's atmosphere transformation from the primary H_2 -He composition to the present O_2 - N_2 composition.

Chemical products of the first process was used by the second one as raw materials.

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ОБОЗРЫ АКТУАЛЬНЫХ ПРОБЛЕМ

Обобщенная гипотеза происхождения простейших элементов живой материи, трансформации первичной атмосферы и образования залежей гидрата метана

В.Е. Островский, Е.А. Кадышевич

Обсуждается оригинальная гидратная гипотеза возникновения простейших элементов живой материи (Life Origination Hydrate Hypothesis; LOH-hypothesis), включающая представления о взаимозависимости и взаимообусловленности процессов возникновения жизни, трансформации первичной атмосферы и формирования залежей гидрата метана. Впервые учитывается, что молодая Земля была "пропитана" небулярным водородом. Возникновение простейших элементов живой материи рассматривается как результат термодинамически обусловленных закономерных и неизбежных химических превращений и универсальных физико-химических законов. Согласно гипотезе простейшие элементы живой материи многократно образовывались и, возможно, образуются из метана (или другого углеводорода), центры и фосфата в пограничных областях твердых фаз газовых гидратов простейших углеводородов. Предполагается, что явление монохиральности нуклеиновых кислот является следствием особенностей геометрии структурной матрицы.

PACS numbers: 87.15. -v, 87.23.Kg, 92.60.Iv, 91.45.Nc

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1. Введение

Процессы, которые привели к возникновению жизни, не могли регулироваться биологическими законами, так как эти процессы происходили в условиях, когда ника-

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после доработки 16 октября 2006 г.

кой биоты с жизни — смежных с общие зако которого мира.

В.Л. Гипозинке за 2003 "редукции" проблем ф статье [2] с мысль: "М чего устро молекул. З управляющ венна типо объяснить. Конкретно ни жизни лема не решена тол

Мы пре происжд (ПЭЖМ) — вых кисло передачу о поколения. Hydrate Ну ставлении термодина неизбежны руются ун законами.





Mitosis and DNA Replication and Life Origination Hydrate Hypotheses: Common Physical and Chemical Grounds

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1. Introduction

1.1 Formulation of the problem under consideration

We proceed from the assumptions that the Earth's living matter had originated on our planet from inorganic and simplest organic substances as an inevitable product of the atomistic world and that the same natural phenomenon underlies the processes of origination and reproduction of living matter. We believe that living matter was originating multiply and, maybe, originates now and that the diversity of the available forms of living matter is caused mainly by some variations in parameters of the native medium. In all probability, stable undisturbed conditions favor origination of the simplest living matter and this process proceeds so slowly that its direction is thermodynamically favorable. "Nature makes no jumps" (Nature non facit saltus (Lat.)): we had this Latin aphorism at our hearts when thinking over the problems of this paper.

The occurrence and reproduction of nucleic acid (ribonucleic acid (RNA)) is the principal feature of alternating phosphate-sugar chains, in which a hydrophobic bond is formed between a phosphate group with a so-called nitrogen base (N-base). As sugars (DR) enter the molecules of DNA and RNA, respectively, deoxyribose (DR) and ribose (R) are used. The N-bases (Cytosine (Cy), thymine (Th), and uracil (U)) and purines (guanine (G), adenine (A), and xanthine (X), hypoxanthine (Hx)) and some molecules contain no U, and RNA molecules contain U. The spatial arrangement of different components in the molecule is defined. For each organism, the occurrence of DNA is the characteristic feature. It is commonly accepted that the sequence of the N-bases in the DNA molecule is determined by the sequence of the N-bases in the DNA molecule. The interest of the scientific community to the problem of the origination from mineral substances was triggered and announced by A. Oparin (1924). It was twenty years later that it was established that nucleic acids rather than proteins cause the diversification of living matter. Oparin's hypothesis became the start





PFO–CFO Hypothesis of Solar System formation: Solar System formation and past and future evolution

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Abstract

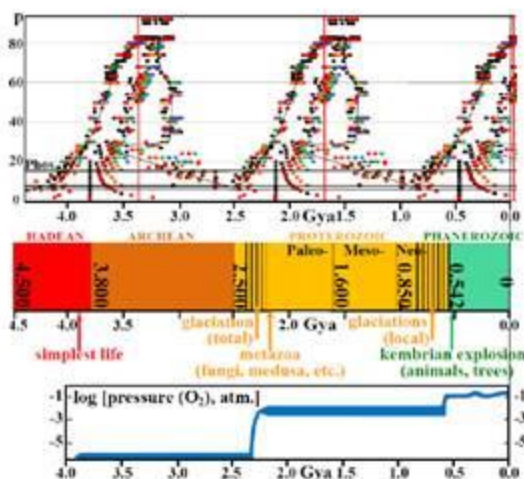
According to the conclusion of the theory, the so-called supernovas correspond to the explosions of the stellar radiation zone but not to those of entire stars and, after that, stars return to their initial state and their new life begin; the Sun is the tertiary star.

1. Introduction: the fields of application of the Hypothesis

The PFO–CFO Hypothesis of Solar System (SS) Formation has been developed by us since 2008 [1]. Its fundamental notions are completed and detailed in 2013 [2, 3]. The hypothesis was originally intended for clarification of the mechanisms and conditions of the SS formation. Its abbreviated name reflects our statement that the SS formation proceeded by two stages: at first, Physically Formed Objects, i.e., cold remote celestial objects formed from light elements of the solar origin through physical processes (agglomeration, adhesion, physical absorption, etc.), and, then, Chemically Formed Objects, i.e., the terrestrial planets and their satellites formed through vortical chemical interactions between the mid-heavy and heavy atoms in the nearer to the Sun space after pressing and heating of this space region by gravity. Later, this hypothesis was developed and covers now the period from the Universe origination up to the destructive processes at the Sun. As is seen from the publications listed below, the fundamental grounds for our hypothesis differ from those for the hypothesis, which is widely-distributed in our days; meanwhile, our hypothesis is capable of giving new and rather simple explanations for the nature of the stellar and solar processes, Sun's history, mechanism of formation of elements, nature and periodicity of the protuberances, discrepancy in the speeds of the solar core and radiation zone (RZ), paradox of the SS moments, solar corona temperature, magnetic storms, appearance of the conditions for the Earth's living matter origination, mechanism of the SS formation, Earth's mass extinctions, historical connection

between a number of the Earth's events discovered by paleontologists and solar events, etc. and of giving predictions for future solar events which could be harmful for the Earth's living matter. As our hypothesis was developed, it was presented orally at the EPSC 2009, 2010, 2012, and 2014 and at a number of other conferences. Some publications are listed below [1–6]. In the last year, we obtained new principal data about Earth's past and future, which correlate well with available data obtained by paleontologists and researchers of the atmosphere; we are glad to present our results at the session that announces "...discussing new theoretical...results about formation and evolution of planetary systems".

2. The Solar System formation and its past and future evolution



The Figure, in the common time scale from our time (right) to 4.5 Gya (left), gives the following three independently obtained sets of results. 1) Upper sub-figure presents our calculations (on the basis of the PFO–CFO Hypothesis) of the emission of isotopes with proton number p from the Sun (right semi-curve), from its maternal (presolar) star (middle



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OPTIMAL NUTRITION AND CELLULAR LIFE PROLONGATION IN THE LOH-THEORY CONTEXT

Abstract

The problems of the nutrition optimization and life prolongation are considered in the context of the Life Origination Hydrate Theory and Mitosis and Replication Hydrate Theory. A new theoretical approach to these problems is proposed.

Key words: *nutrition optimization, life prolongation, Life Origination Hydrate Theory, Mitosis and Replication Hydrate Theory*

INTRODUCTION

Each organism eats to be alive, and each person knows that prolonged life is impossible without eating. But wherein is the essence of life as a natural phenomenon? Why, can organisms go without eating for some period and by what factors is the duration of this period limited? What nutritions that consist of individual chemical substances or their complicated compositions are acceptable, unhealthy, or capable of leading to the fatal cases? Each person or, at least, almost each one is interested in specification of the optimal food composition capable of providing the health and maximal lifetime for himself and nears and dears. The persons who design the food production processes and distribute the food items and goods among the population bear also moral civil responsibility for the nutrition quality. What is the nature of the so-called Hayflick's limit, according to which each population of normal human fetal cells in a cell culture is capable of dividing 40–60 times only and then becomes

Natural Mechanism of Origination and Conservation of Monochirality of Amino Acids

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ABSTRACT The proteins belonging to different organisms as well as the natural amino acids incorporated into proteins or occurring free in tissues and lymphatic fluids are, as a rule, levorotatory. This article contains a simple explanation of this structural discrimination and of the extremely slow racemization of natural organic substances. *Chirality* 28:153–157, 2016.

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KEY WORDS: optical activity of organic substances; optical activity origination; racemization mechanism; levorotation-to-dextrarotation transfer mechanism; protein levorotation

In living organisms, molecules of all amino acids (AAs), except glycine, contain asymmetric C-atoms, i.e., atoms that are valence-bound with atoms of other elements, and molecules of threonine and isoleucine contain two asymmetric C-atoms. Therefore, each of these molecules as such is optically active. For a long time it has been agreed that the levorotatory effect is a mandatory feature of all natural AAs and proteins. In the last decades, it was discovered that this is not quite so: D-alanine and D-proline were discovered in the tissues of crustaceans and mollusks¹ and of rats,^{2,3} respectively; the occurrence of D-serine, D-aspartic acid, D-alanine, D-proline, and D-leucine in human and murine tissues has been described,^{4,5} etc. Nevertheless, AAs are incorporated into living organisms substantially in the L-form and the natural AAs and proteins rotate the plane of polarization, as a rule, to the left. These data give the idea that the levorotatory effect of the natural AAs and proteins is of a kinetic nature and can reveal itself to a different degree depending on the ambient conditions characteristic for living organisms or their individual tissues.

The preferential availability of the levorotatory AAs in living organisms induced long-time astonishment, which resulted in mystical assumptions; for example, it was suggested in a published scientific work that this phenomenon could be somehow connected with the fundamental asymmetry of the Universe.⁶ A lot of other notions of the mechanism of the AAs monochirality origination are also available. For example, assumptions were published that just intramolecular interactions between the nucleotide base and AA sidechain is capable of selecting the chiral AAs,⁷ that chiral discrimination proceeds at the first step of aminoacylation,⁸ that chirality results from chiral catalysis at surfaces of some solids,⁹ etc. The multiplicity and incompatibility of the approaches applied to explanation of the mechanism of origination of the phenomenon of monochirality of AAs and proteins show clearly that the problem is not solved. In addition, there is one more unsolved problem coupled closely with the monochirality of AAs, namely, the problem of why racemization of natural monochiral substances doesn't proceed or proceeds extremely slowly.

Meanwhile, in our opinion, the monochirality phenomenon can be rather reliably explained by using today's knowledge of the molecular structures and of the reaction kinetics and thermodynamics.

This article proposes an explanation of the monochirality of natural AAs in the context of the LOH-Theory,^{10–18} according to which AAs originated within the methanohydrate



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PROCEEDINGS

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«BIOLOGICAL DIVERSITY AND CONSERVATION PROBLEMS OF THE FAUNA-3»

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Пленарная лекция

МАССОВЫЕ ВЫМИРАНИЯ ВИДОВ: ПРИЧИНЫ ФАНЕРОЗОЙНЫХ ВЫМИРАНИЙ И ВОЗМОЖНОСТЬ ПОВТОРЕНИЯ ПОДОБНЫХ ЯВЛЕНИЙ В БУДУЩЕМ

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Abstract

An analysis of paleontological data on phanerozoic living-matter mass extinctions in the context of the PFO-CFO Theory of Solar System Formation and Transformation leads to the conclusion that the extinctions are caused by solar events, namely, by extreme rather rare but predictable solar protuberances that contain, along with electron gas, radioactive pico-drops of solar substance of special neutron-to-proton ratios. These pico-drops are able of multiple decaying and thus producing the isotopes that gain the energy sufficient to reach the Earth, being highly radioactive. The radioactivity of these precipitations is the cause of the extinctions. The periods of nine most fatal paleontologically-revealed extinctions are confirmed by calculations performed on the basis of our theory. The theory allowed prediction of solar phenomena promoting the conditions for the next extinction for the foreseeable future.

В данной работе представлены метод и результаты расчета будущей истории Земли, для которых, согласно ФФО-ХФО теории, следует ожидать экстенсивных массовых вымираний. Разные авторами различающиеся данные о масштабах прошлых вымираний, но вымирания весьма значительны и повсеместны. Например, согласно (Permian-Triassic extinction) погибло 96% морских видов и 70% наземных животных. Вымирания не имеют четкого объяснения. Расчеты, выполненные по ФФО-ХФО теории, объясняют девять идентифицированных массовых вымираний Фанерозоя. Применение теории и методики расчета к будущим вымираниям позволяет предсказать период ближайшего обострения вымирания и спрогнозировать солнечные и земные атмосферные и климатические явления, способные предшествовать. Согласно нашим выводам, вымирания происходят под воздействием радиоактивными солнечными протуберанцами. Возможность на Земле существования мощнейших протуберанцев, которые могут критически изменить условия жизни на объектах, подтверждается наблюдавшейся 3 года назад серией протуберанцев на звезде, красном карлике DG CVn. Хотя звезда втрое меньше Солнца, но каждый из двух первых протуберанцев в этой серии была больше, чем один солнечного протуберанца, описанного в литературе, более чем в 10 раз.



Life Origination Hydrate Theory (LOH-Theory) and the Explanation of the Biological Diversification

Victor E. Ostrovskii · Elena A. Kadyshevich

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Abstract The Life Origination Hydrate Theory (LOH-Theory) considers the life origination process as a sequence of thermodynamically caused regular and inevitable chemical transformations regulated by universal physical and chemical laws. The LOH-Theory bears on a number of experimental, thermodynamic, observation, and simulation researches. N-bases, riboses, nucleosides, and nucleotides and DNAs and RNAs are formed repeatedly within structural cavities of localizations of underground and under-seabed honeycomb CH_4 -hydrate deposits from CH_4 and nitrate and phosphate ions that diffused into the hydrate structures; proto-cells and their agglomerates originated from these DNAs and from the same minerals in the semi-liquid soup after liquation of the hydrate structures. Each localization gave rise to a multitude of different DNAs and living organisms. The species diversity is caused by the spatial and temporal repeatability of the processes of living matter origination under similar but not identical conditions, multiplicity of the DNA forms in each living matter origination event, variations in the parameters of the native medium, intraspecific variations, and interspecific variations. The contribution of the last to the species diversity is, likely, significant for prokaryotes and those eukaryotes that are only at low steps of their biological organization; however, in the light of the LOH-Theory, of available long-term paleontological investigations, and of studies of

reproduction of proliferous organisms, we conclude that, in toto, the contribution of interspecific variations to the species diversity was earlier overestimated by some researchers. The reason of this overestimation is that origination of scores of «spores» of different organisms in any one event and multiple reproductions of such events in time and Earth's space were not taken into consideration.

Keywords Living matter origination · LOH-Theory · Origins · Biological diversification explanations · Life origination thermodynamics · Evolution biological · Monochirality of DNA

Introduction: Interconnection Between the Problems of Life Origination and Biological Diversification

Allow us to begin our consideration from the life concept definition. This problem has been under spirited discussion since 1935, when Stanley pioneered isolation and crystallization of the tobacco mosaic virus. It is considered by us in (Ostrovskii and Kadyshevich 2007), where the opinions of different authors are presented. The problem consists in the fitting of the boundary line between the living and mineral substances. Today, viruses and even viroids are regarded as biological substances and are studied by biologists. Each of these species contains DNA of a specific composition. Therefore, we regard the formation of nucleic acids from minerals as the onset of the simplest pre-cellular life. If a living system were devoid of nucleic acid, with its protein content preserved, the vital activity would surely cease; if a living system were devoid of its protein, with the nucleic acid preserved, the vital activity of the system supplied with nutrients might normalize with time. Apparently, once nucleic acids had originated and

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International Workshop on
Chemical Evolution & Origin of Life

2010

NAI, IITR

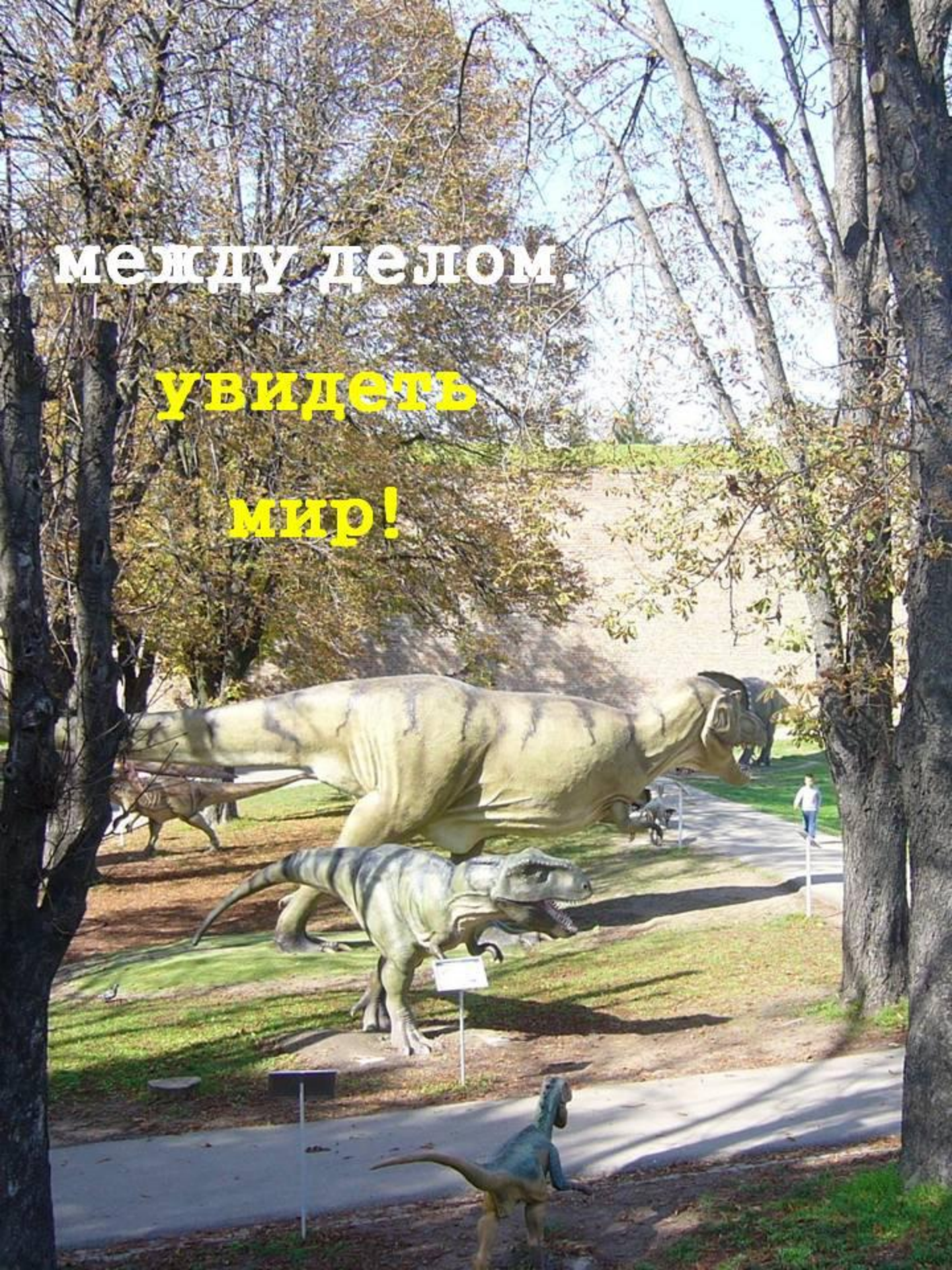
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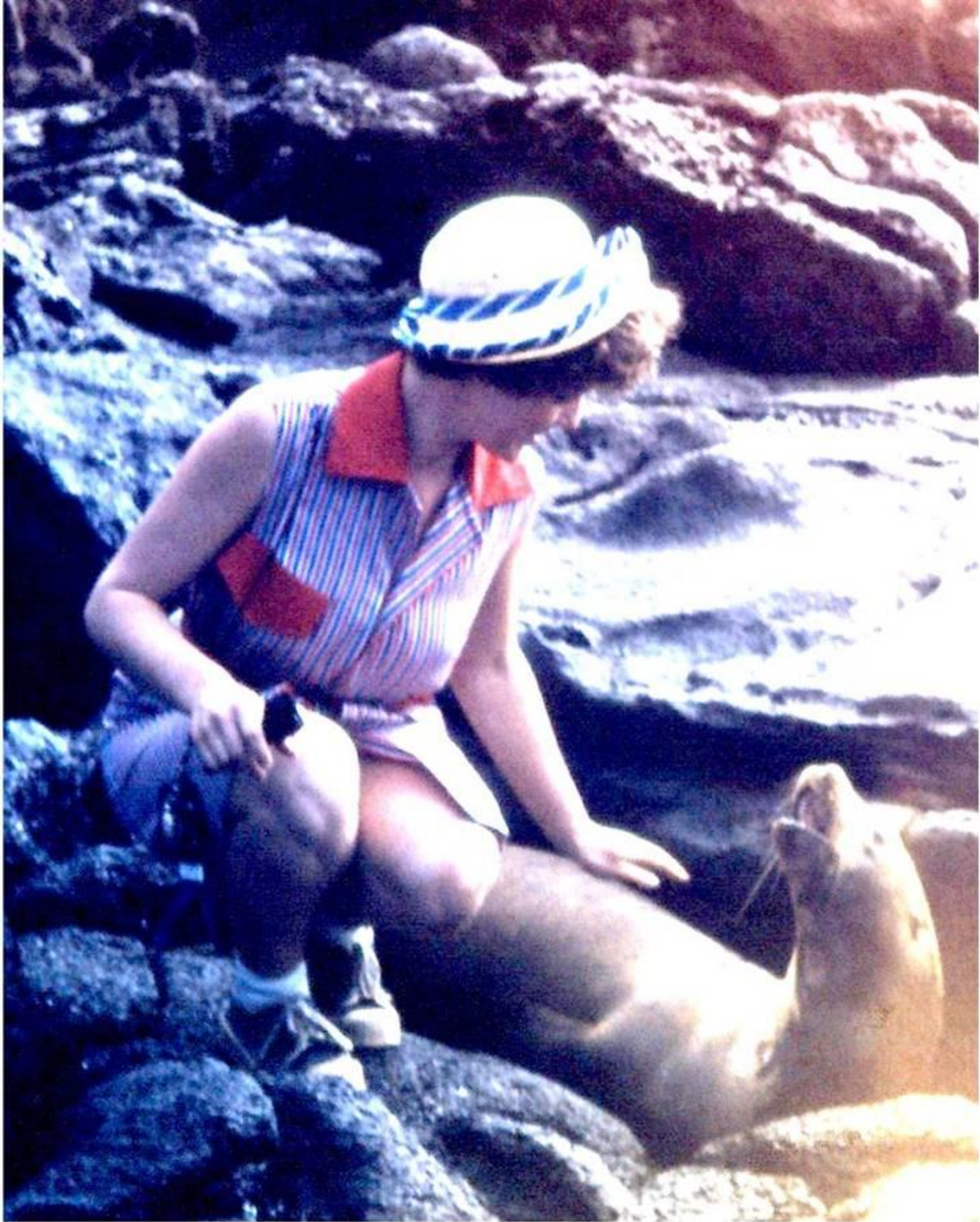
увидеть

мир!





Гавайи, кругосветная экспедиция, 1971



Галапагосские острова, 1971



Тайланд, 2007



Тайланд, 2007



Великая Китайская Стена, 2008



Китай, Пекин, Летний Дворец, 2008



Китай, Шанхай, храм Будды, 2008



Китай, вид на новый Шанхай, 2008



**Италия, Флоренция, Уффици,
Эль-Греко, 2008**



**Германия, Потсдам, Русская Колония,
2009**



Сицилия, вулкан Этна, 2010



Сицилия, 2010



Италия, Рим, Храм Ангела, 2010



В музее Ватикана, 2010



Индия, Дели, 2010



Индия, Дели, 2010



Индия, Тадж-Махал, 2010



Испания, Мадрид, Прадо, 2012



Лондон, Парламент, 2013



Лондон, 2013



Лондон, Собрание Уоллеса, 2013



**Португалия, Лиссабон,
Собор Св. Иеронима, 2014**



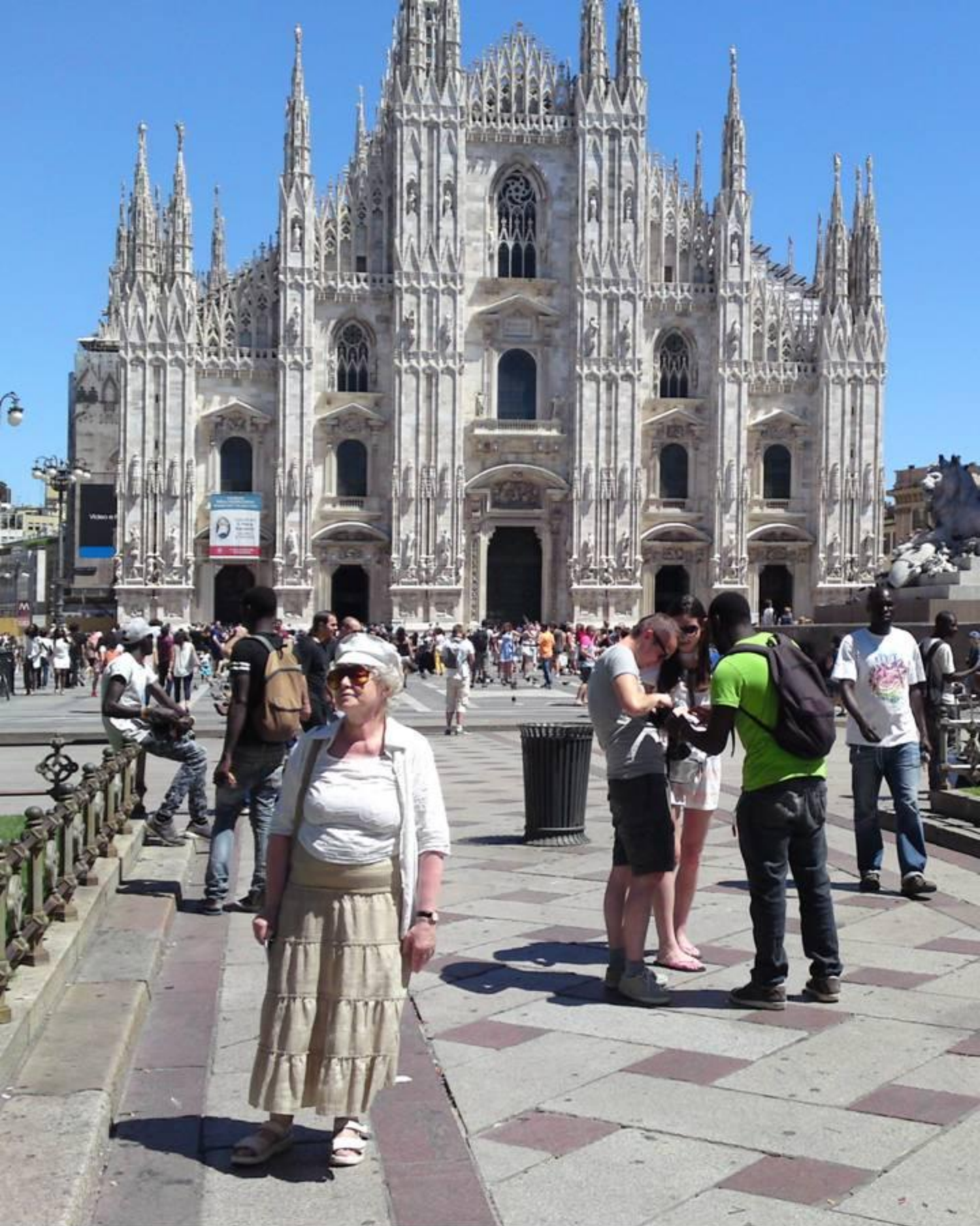
Португалия, Эсторил, Европейский конгресс по наукам о планетах, 1914



После конгресса, 2014



Венгрия, Будапешт, Парламент 2016



Италия, Милан, 2016



Израиль, Иерусалим



**Израиль, Иерусалим,
вход в Храм Гроба Господня**



Израиль, Иерусалим, в Старом Городе



Израиль, в деревне бедуинов, 2015



Израиль, Эйлат 2016; дайвинг



Армения, Ереван, 2017



**Петергоф, Конгресс по атмосферной
радиации и динамике, 1917
... между капельками...**