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Editorial

Dear Reader,

thank you for having considered IJPV — the International Journal of Paleovisitology — a new tree in the tight forest of scientific publications.

Many science fellows and other concerned professionals are interested in the scientific discussion of the controversial paleovisit subject matter. This led to Paleovisitology — a new developing field of study aiming at a scientific investigation of the theoretical & practical possibilities of direct contact between intelligent civilizations in the Universe as well as of the search for possible Extraterrestrial (ET) traces in our Solar System or on the Earth.

No field of study can exist and develop without a dedicated scientific medium, this led to the foundation of IJPV which is being offered as a carrier of the scientific paleovisitological discussions, publishing any contribution to this field as well as reviews and other informations supporting this research. Of course, objections against the Paleovisitology itself are equally welcome. With the help of IJPV, Paleovisitology will be present in the world of science, while its publisher is ready to arrange the publication of further related works.

You might ask whether it makes any sense to think of paleovisits, to build-up Paleovisitology and to publish a related journal. We, the IJPV Editorial Board, know that this complies with the research interest of many concerned fellows and hope that the contents of IJPV would be convincing. IJPV will exist as long as necessary for the related scientific discussions and each issue shall be a demonstration of the standards of science.

Paleovisitology is a pronounced interdisciplinary field of study, it belongs to the more general field of ETI research (ETI= ET Intelligence) and is to be understood within the framework of Space Sciences. The search for a "hypothetical ET connection" in the History of the Mankind or of the Earth can & must go on only with the rigorous methods of the sciences of nature, while an appropriate philosophical and other covering is equally necessary. By this, Paleovisitology provides a coverage of the Space Research within the Humanities also.

I believe that it is a humanistic duty of Man to think over its place in the Universe and about the possible existence of other intelligent civilizations. This implies a discussion of contacts. Many science fellows or professionals, including scientific or industrial VIPs (Very Important Person) are against the idea of Search for ETI (SETI), even today, believing that it makes no sense. Such views

are, however, in opposition with the scientific results during the past centuries which proved to defeat continuously geocentrism and homocentrism. Prior to his discovery of America, Chr. Columbus was called "the dreaming sailor of Genoa"...

Another question is whether we, the Mankind, are ready to meet ETIs. We are continously damaging the Earth, its & our environment while military and other conflicts often represent a danger to the very existence of Man on this planet. If ETIs were watching us during the last weeks, then they would have noticed that the "High War Parties" of the recent Gulf War have set on fire One Giga-Dollar (US\$ 10°) daily (during the fighting). Such financial means could have been better used to linder the problems of Earth and even minor fractions could have been very beneficial to SETI.

The present stage of the Mankind is not yet a match to its cosmic place or responsibility but I hope that the ETI research would contribute in this direction. For example, for a better understanding of the (widely supported) assertion that intelligence is a superior form of life: one ought to conclude that a civilization should protect not only its life but its intelligence also. And the present civilization on the Earth still face problems trying to guarantee the right of any individual to live.

We wish that this journal becomes easily available to anybody, to concerned and other science fellows, to a large readership wishing to learn about the results of the research and about the scientific way of thinking. Some readers might wonder, however, that this issue contains no report about or promise of the discovery of an ET-trace — such a report may appear in IJPV only if the ET origin has been proved without any doubt; otherwise one shall talk of a hypothetical trace or just of an anomalous find.

And this issue is just the begin of IJPV which shall be a scientific medium of communication and discussions about the Paleovisit Problem, about methods of search and validation of proofs etc. In response to a wide interest for and concern about these themes, it has been decided to show presence with IJPV in the scientific publication network; next issues shall look better.

We hope that Paleovisitology would become a valuable contribution to the human culture and invite concerned colleagues to cooperate. IJPV's Editorial Board would be pleased to learn about your opinion concerning this scientific and publishing enterprise.

Paul Ney

Dear Colleague,

You know, of course, that a long and hot controversy on the question of the ancient visits from the Outer Space (or Paleovisits) between enthousiasts, (usually amateurs) asserting cosmic origin to some relics of the past, and scholars, who reject in most cases such an interpretation, begun during the early 60ies. The tension of this dispute slackened finally, partly because both sides realised the impossibility to prove anything to the opponent.

But the problem itself remained in reality not only unsolved, but even unraised. Almost none of the disputants questions the feasibility of the Paleovisits (because it would mean in fact to question the idea of the existence of ETI — Extraterrestrial Intelligence — which has credit in the modern science). It is mainly the nature of the "supposed paleovisit traces" that is being discussed, although without a serious theoretical concept of a Paleovisit or its possible traces. As a result, the dispute proved to be rather nonsense and endless.

But the development of the ETI studies does require a serious analysis of the Paleovisit Problem, respectively the creation of Paleovisitology as another way of the Search for Extraterrestrial Intelligence (SETI). "Paleovisitology" does not mean to us just "the Science of the Paleovisits"; it must be first of all an interdisciplinary branch of the scientific research whose main aim would be to raise and try to solve the Paleovisit Problem (including search & test methods) by means of strict scientific methods.

Several science fellows did more then just discussing the Paleovisit Problem: they thought & talked about various means to set up an organizational framework, e.g. a Scientific Investigative Committee (SIC), devoted to this subject matter. In elaboration of this idea the undersigned scientists formed an Initiative Group (IG) to prepare the creation of this Committee. Our first step in this direction is the following Draft Declaration; its first draft, submitted by Dr. Rubtsov at the begin of 1988, has been somewhat modified following discussions (via a Circular) in an international scientific working group. We thank all colleagues who contributed with direct comments & suggestions and all authors who paved our road.

Please consider this Declaration and inform us about your opinion concerning Paleovisitology, its concepts, the goals as formulated in this Declaration and whether you would support this new developing branch of Science. We wish to know whether you would sign this Declaration or a new version of it, in order to address further colleagues and/or you are willing to cooperate /contribute to the paleovisitological research.

We wish to underline here our intention to develop research observing the scientific standards and following strictly in this practice the main principle of the interdisciplinary research: the division of the spheres of competence. We know that the borders of these spheres are not rigid — science and scientists develope permanently. But in view of our professional responsibility we wish to state firmly:

Decisive statements or criticism with respect to a scientific discipline concerning a subject of research or to its conclusions could be made only by specialists of this discipline. Any doubt, may be well-founded, but expressed "from outside" the discipline, must be supported by the specialists to become a theme of a serious discussion and subsequent elaboration. Otherwise it is impossible to maintain the scientific character of the investigation for a long time.

The internal communication means within our IG was the "Paleovisitology Circular", the circular for the needs of SIC would be the "Paleovisitology Newsletter". We wish to inform all the addressees of this Pamphlet about the correspondence, feedback etc. relating to our initiative [...]

Any branch of the Science needs at least one own communication medium: a specialized scientific periodical named "International Journal of Paleovisitology" is under preparation now. We would like to learn whether you might consider to submit papers, essays, letters to the editor etc. for publication in this Journal. The first issue will include the text of the Declaration as well and you may wish to add your opinion in the form of a letter to the editor or a short communication. (Further papers will be processed also.)

Our Declaration is in fact only a first version; we await the readers' estimations, opinions, comments and further proposals to take them into account for a final version to be published in the near future as a collective work. Any suggestion of a university or another scientific institution which might promote some way the Committee's activities would be especially appreciated.

Yours sincerely,

Paul Ncy, Coordinator of the Initiative Group * Postfach 102747 * D 3500 Kassel 1 * F.R. Germany

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NOTE OF THE IJPV EDITOR:

This is the open letter of the Initiative Group, the introduction to the Declaration, (slightly shortened) reprinted from the 3rd edition of the "Call for Paleovisitology" pamphlet, a special edition for the Third International Symposium on Bioastronomy, Val Cenis, Savoie, France, June 18/23, 1990.

Declaration of the Initiative Group of the Scientific Investigative Committee on the Paleovisit Problem

by

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Abstract. This (partly collective) work presents a survey of the Paleovisit Problem and of its discussion in the scientific and non-scientific literature. Further, arguments in favour of a scientific discussion of this problem are presented, proposing an elaborate interdisciplinary research and the build-up of Paleovisitology as a new field of study. The work draws up also the structure and the tasks of the proposed Scientific Investigative Committee on the Paleovisit Problem as well as research themes/problems of or in this new field. In view of the interdisciplinar character of Paleovisitology, works concerning Space Sciences, History, Philology, Philosophy etc. are needed.

(Received: April 1990)

1. Introduction

For the last 30 years the Problem of Extraterrestrial Intelligence (ETI) became one of the recognised and actively studied problems of the science. In a number of countries (first of all in the USA and USSR) complex equipments & methodologies have been developed and used to search for signals of ETIs, prominent scientists attend conferences on this subject matter and give lectures, monographs and collections of papers are being published. There are even diplomatic contacts at the United Nations level aiming at an international agreement on SETI/CETI (t.i. Search for & Contact with ETI) issues, as diplomats (& scientific expert commissions) found interest for these problems.

Such a dynamic development of the ETI Problem, while there is no practical evidence of the ETIs existence, shows that many specialists in the fields of Astronomy, Physics, Biology etc. understand the profundity and importance of this problem. Nonetheless, there still remains the task of obtaining direct experimental data revealing the ETIs reality. At present, practical SETI is the most needed job in this field.

Which are the theoretically conceivable and practically possible means of such a search? For a simple presentation, see the table on this page.

Variant 4 is possible for our civilization only theoretically; variant 3 calls for considerable patience and is unpractical, as transmission requires a great deal of time. Variants 1 and 2 are seriously developed by the scientists who are engaged in the SETI problem. What is more, these are often considered to be the only ones which deserve study by scientists and thus SETI is reduced to the radio-Search for ETIs.

But the search for past extraterrestrial visits in the Solar System (or Paleovisits) has been divided initially rather paradoxically into two opposite approaches. Search for the traces of visiting the Solar System (beyond the Earth:

Search for and Contact or Communication with ETIs (SETI/CETI):

signal level

- incidental signals

1) to observe some cosmic manifestations of ETI's activities (at radio, optical and other frequency ranges)

- deliberate signals

- 2) to search for alien signals deliberately beamed to outer space
- 3) to transmit signals from the Earth, hoping to receive a reply

exploration level, automatic and/or manned

- beyond the Solar system

4) to launch (remotely controlled or manned) space vehicles to those stars and associated planets and/or outer space areas where an ETI existence is suspected

- in the Solar System, beyond Earth

- 5) to look for definite ETI presence in our Solar system such as (habited or not habited) bases, starships etc.
- 6) to look for traces, "footsteps" of ETIs respectively of ETI-activities

- on the Earth

7) to look for traces, "footsteps" of ETIs respectively of past ETI-activity

variant 6) is being considered quite seriously (see e.g. [6]), even though with a less attention than the "long range" radio search. But the search for these traces on

the Earth (variant 7) is practically out of the attention of the science (exceptions only confirm the rule).

Which are the reasons of such a sharp contradiction between these possibilities that are equally admissible from a theoretical point of view? Let us remember that variants 6&7 are rejected as a whole only together with the "initial" hypothesis of the plurality of inhabited worlds (see, e.g. [7]). The leading position of variants 1&2 among the others is understandable: these have been raised in strict conformity with standards of the Science and its experimental methods. Equally understandable are the grave doubts which many scientists have about variant 5: it reminds (justifiably or not, it is another question) them of the most controversial UFO problem. But why are variants 6&7 so different in the perception of the scientific community? After all, variant 7 is only a special case of the more general variant "Search in the Solar System"... To comprehend how such a situation shaped, let us briefly examine the history of the Paleovisit Problem for the past few decades.

2. The History & State of the Art of the Paleovisit Problem

The idea of ancient extraterrestrial visits to the Earth arose in the modern science almost simultaneously with the idea of radio-SETI, expressed in the famous article by G. Cocconi & Ph. Morrison [4] and, generally speaking, such ideas might have been developed in equally scientific ways (see [1], [14]). But the subsequent discussion of the paleovisit question went a wrong way and there were some objective reasons for this. These were first of all radio-astronomers and radio-physicists who began working out the ETI problem in the early 60s. Their interest concentrated on the radio search, in particular as the paleovisit question does not fully fit the framework of the natural sciences. But at the same time this question has little in common with traditional themes of the science of history. The "too" interdisciplinary character of the Paleovisit Problem required uniting methods and achievements of the sciences as much different as, for example, Cosmology and Philology, or Astronautics and Archaeology. Because nobody tried to reach such a unity, this led to the stoppage of the problem's development just after its start.

But since there was an obvious need for the further elaboration of the Paleovisit Problem, that proved to be very fascinating and also became a theme of the Science Fiction literature, it drew the attention of amateurs. They were attracted, specifically, by an apparent easiness of the work in this field (unlike the problem of radio-SETI, requiring a professional level of knowledge of special scientific disciplines): it was enough to replace mechanically the "gods" in an ancient myth by "space visitors" and one more version of the "ancient astronaut hypothesis" was born.

If one tries to sum up all the versions of this hypothesis, proposed by various authors, it will turn out that extraterrestrials not only were here on the Earth from the begin of times, but they actively influenced the develop-

ment of the Mankind. Moreover, some authors believe that these were space visitors who created life & intelligence on Earth. Naturally, such a radical "revision" of history aroused many objections: there appeared critical works to counterbalance the ancient astronaut hypothesis

In 1973 the ancient astronaut movement became organized into the Ancient Astronaut Society (AAS, founded by Dr. Gene M. Phillips), which is an association of scientists, writers, artists, students and others (see [11]), and whose research methodology does not exclude the conviction that one can interpret correctly monuments and other archaeological finds of the past even without the aid of a special knowledge (see, e.g. [5], p.60). This society holds regular international conferences and publishes a bimonthly bulletin "Ancient Skies" (in English and German respectively). Creation of the AAS marked (being, however, rather a result than the cause of) a rupture between the paleovisit subject matter, which almost completely passed under the authority of amateurs, and scientific searches for ETIs identified with radio experiments. Any attempt to debate the possibility of visits from the Outer Space seemed quite unscientific and therefore blameworthy.

It was only the scientific consideration of the "Fermi paradox" (the "if-they-existed-they-would-be-here" thesis) that really cleared the way to a serious discussion of this problem within science. This argument has been reconsidered in detail since 1975 and led some scientists (to begin with M.H. Hart who was the first to raise this dilemma definitely and bluntly in his work [7]) to the conclusion of our civilization's cosmic solitude and others, to the assumption of an actual presence of extraterrestrials in the Solar system (see e.g. [10]). This situation opened, to a certain extent, access to the network of scientific publications for those professional scientists who are inclined to admit the possibility of paleovisits of extraterrestrials to the Earth (see e.g. [2], [8], [9], [15]).

But this discussion also came shortly to a standstill—as distinct from the idea of visits to the Solar System, which got a considerable development (see [3], [6], [10]). There were several main reasons for the latter outcome: first, the lower "level of interdisciplinarity" of the needed investigations; second, the SETI specialists' greater certitude of their knowledge of space sciences than of History and, third, the fact that this field was untouched by amateurs.

To sum up, the present-day situation is rather contradictory. The development of the ETI studies does require a scientific elaboration of the Paleovisit Problem (at least to overcome the "Hart counter-revolution"), but this problem has not even been raised as yet in a scientific manner, even though some scientists wrote valuable books/articles on this issue. Its main difficulties are the lack of specialists who are competent at the same time both in SETI and in History, as well as the barrier of the "fear of pseudoscience" which prevents scientists from perceiving this problem on a true rational level. What can be done in order to surmount these difficulties?

3. SIC Initiative

In 1979, at the 14th Readings dedicated to the memory of the Russian pioneer of Cosmonautics K.E. Tsiolkovsky, Yu.N. Morozov and V.V. Rubtsov put forward the idea of Paleovisitology as a special scientific branch of study aimed at raising and working out the Paleovisit Problem ([9], see also [13]). Theoretical models of a paleovisit and its traces, their expected types, as well as trace search methods must be developed within this new branch. It will serve as a common scientific basis for debating any questions related to this problem, including specific interpretations of the monuments of the past. Paleovisitology can be a rival neither to SETI (understood as radio-SETI), nor for the science of History; it has to be grounded on the methods and achievements of both of them. Success of a paleovisitological research depends to a great extent on the ability to unite such different research fields.

These considerations have been developed to a certain extent in the work [12], but as a whole they remain for the time being more methodological than concrete. To proceed to the formation of the Paleovisitology in its special scientific aspects it is necessary to unite efforts of experts in very different fields of knowledge - first of all historians, archaeologists, philologists, but also astronomers, mathematicians, engineers etc. In our opinion, it may be achieved within the framework of an informal structure - the Scientific Investigative Committee (SIC) - uniting on a voluntary basis scientists from various countries who want to take part in the paleovisitological studies. Apart from such a desire, the only condition for such a participation is the specialized fundamental education at least in one of the fields of Natural or Social Sciences, Philosophy, Engineering or the Humanities.

The main goal of the Committee's members would be, on the one hand, to analyse the Paleovisit Problem in its disciplinary aspects, and on the other hand, to synthesise on this basis its interdisciplinary presentation. To attain this goal SIC should develop the scientific Paleovisitology as a really functioning field of research and promote it. We sketch in the sequel various aspects of this general activity.

3.1. SIC Organization

SIC is a free association of science fellows desiring to design and to promote a new science branch and to contribute to its development.

SIC can be seen as an institute by correspondence, where the members cooperate and maintain contact through mails, conferences etc. and without the hierarchical structure of an usual research institute. A simple and efficient organizational framework is needed for easing work: a coordinator acting as a central contact person and editing a circular etc., further a bureau and a chairman, if SIC grows. Direct contacts within SIC would not be limited this way. (A list of SIC members including addresses and spheres of interest could be made public in order to promote direct contacts.)

SIC-Members are expected to act in favour of Paleovisitology, seeking support for research projects, trying to set up research groups and to find a basis at interested academic or industrial research institutions. They may opt for some of the following tasks/goals according to their domains of interest.

3.2. SIC and the Science Community

SIC aims to overcome the anti-paleovisit bias and wishes

- to form a community of specialists who are recognized members of their professional communities and at the same time are actively studying the Problem of Paleovisits;
- to call those researchers who have some interest in this field to cease with defending or refuting the Paleovisit Hypothesis and to investigate the Paleovisit Problem;
- to motivate other profesionals, students etc. to join this new field of research and possibly obtain a scientific/professional degree working out a thesis on issues of Paleovisitology;
- to achieve a high scientific level of the investigations and to arrange the results in full conformity with the requirements of the scientific publication system;
- to hear also from those specialists who are refraining for some reason from joining SIC, but wish at the same time to state their opinions on the raised questions or even collaborate with SIC. SIC will treat such cases with full understanding and the guarantee of the anonymity of the correspondents.

Of course, a research practice shall not be restricted to the theoretico-methodological recommendations; there must be a feedback between these components which will suggest some new ideas, additions and corrections.

4. Near-term Plans for SIC Activities

Up to this time the SIC Initiative Group consisting of a few persons who signed this Declaration has been organized and is taking the first steps to form the Committee: call for members, organizing the financing and releasing the Paleovisitology Newsletter which is supposed to be the main means of communication within SIC. Once an initial core of the Committee (numbering some 20 persons) has been formed, there would be a possibility to elect a chairman and the Bureau of SIC and then to proceed to the following concrete tasks:

4.1. Definition & Design of Paleovisitology

- Elaboration of a scientific definition of Paleovisitology observing the corresponding methodology of modern science, i.e. describing the research field and goals, work methods and "interface" to established science branches. The definition should fit the requirements of a scientific encyclopedia, point to the need for this new research field and describe it and the concept of a Paleovisit also.
- The interface to established science branches means elaborating "disciplinary projections" of the Paleovisit

Problem on the basis of methods and achievements of individual sciences. This includes a listing of relevant scientific research methodologies that could be taken over by Paleovisitology.

- A further step is to work out the real and efficient interconnections & interactions within the "heterogeneous" group of disciplines involved in the paleovisit-ological studies. A catalogue of recommendations for the research activity in these fields might be conceivable and necessary.
- The (modern) tasks and the (future) achievements of Paleovisitology are to be related to the tasks and needs of established scientific disciplines.
- A scientific definition of Paleovisitology together with the description of its interrelations to other science branches would be further developed generating a catalogue of key words. This requires a (hierarchic) system of notions that might become the thesaurus of a data base observing computer science standards.

4.2. State of the Art and Research in Paleovisitology

SIC would work out a report on the state of the art in Paleovisitology and a research program pointing to main tasks to be fulfilled or problems to be solved as an immediate goal. Updates to the report and program would be made public from time to time.

Other works by SIC or by members etc. respectively the program itself might be more elaborate and precise, e.g. including a list of paleovisitological subproblems, their main disciplinary components, synchronous and diachronic connections, as well as an "aims' tree" linking solutions of the subproblems with the solution of the Paleovisit Problem as a whole.

A special and important research task is to set up an abstract model of contacts between ETIs and thus of a Paleovisit as well. Based on such a model follows the creation of integrated methods for preliminary selection of possible paleovisit traces, as well as for clearing their information of various distortions.

Selection of the most promising possible Paleovisit traces and their interdisciplinary investigation closely relates to the previous step. And last but not least, the development of special methods of reconstructing the fact of a Paleovisit on the basis of this information is a further task.

4.3. SIC Media Work

SIC members intend to publish paleovisitological works in the existing scientific publication network, to create an own publication means and later a system of specialized paleovisitological publications observing the corresponding scientific standards, interested science fellows are called to follow this example and to support SIC media efforts by submitting papers etc.

SIC contacts would be maintained through an internal circular or newsletter edited by the coordinator. This

informal publication would serve as a discussion forum on central/common issues and pass on information.

SIC wishes to provide a preprint service to its members and to interested colleagues, this means to release a preprint series easing the early & quick distribution of works. The preliminary draft of a paper or its text in extenso (or even work reports) could be made public as a preprint, while the final version or a shorter report could be submitted to a speciality journal.

Editing of a special scientific Journal of Paleovisitology is a near term goal of SIC, since a scientific branch needs at least one own publication medium. SIC members and invited colleagues would act as referees of this journal.

The "International Journal of Paleovisitology" <Note of the IJPV Editor: you read its first issue > should be kept at low price in order to ease wide distribution and information. (It complies with the cultural principles of our modern society, if results of the research are easily accessible to the public.) This is possible due to the current "revolution" in editing and printing technologies ranging from Desktop Publishing to low cost good quality printing. Journal financing by accepting serious business advertisments from companies is conceivable.

This media framework — circular/newsletter, preprint series and journal — should not deter researchers from publishing paleovisitological papers in established journals or from supporting the scientific Paleovisitology through other publications.

Somewhat more distant plans for SIC activities may include convening scientific conferences and workshops, issuing collective monographs and/or collections of articles, as well as forming several disciplinary subcommittees on the Paleovisit Problem. Of course, it will be possible only if and when some significant scientific results are obtained.

We invite colleagues, working in any field of the scientific research, who wish to participate in the serious elaboration of the paleovisit problem to join up with the Scientific Investigative Committee and send their propositions on the SIC's activities and working plans to the Initiative Group Coordinator:

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NOTE OF THE IJPV EDITOR:

The first draft of this work has been submitted by Dr. Vladimir V. Rubtsov of Kharkov/USSR at the begin of 1988 who proposed it as a Declaration of science fellows wishing to support Paleovisitology, i.e. the scientific way of investigating the Paleovisit Problem. The draft has been discussed and worked over in a first international scientific working group. The present text is taken from the 3rd edition of the Paleovisitology Pamphlet, a special edition for the 3rd International Symposium on Bioastronomy, Val Cenis, France, June 1990.

Some Statistical Data About IJPV 1(1), 1991

Biblio-metric Analysis (BMA) gains continuously importance and is quite widely used. A straitforward definition is "statistical analysis & evaluation of bibliographical data". BMA reports prove often to be useful, e.g. when tracking down & finding out main source works or references or when investigating the dynamical development of the literature in specific fields etc. A basic concept is to consider the scientific or technological etc. literature in a specific field as a quite complex graph (as defined in Graph Theory), whereby each work is a knot and the reference to another one defines an edge or way.

Some peoples do not like BMA or believe it is questionable. In any event, BMA results/reports are sometimes interesting and even surprising.

BMA applications with respect to IJPV will be presented, however, in each issue to the convenience of all interested or concerned readers. With respect to this first IJPV issue we will consider the main contributions, namely:

- [1] Rubtsov, Vladimir V. (et al.): The Declaration of the Initiative Group of the Scientific Investigative Committee on the Paleovisit Problem (pp.5-9);
- [2] Ney, Paul: Profitable Themes for Paleovisitology (pp.11-14);
- [3] Morosov, Yuriy N.: Search for Traces of Paleovisits: General Principles and Problems (pp.15-18);
- [4] Ney, Paul: On Arguments of Theory of Knowledge in the Discussion of ETI Concepts (pp.19-21);
- [5] Holmes, Diane L.: Comment on "Paleovisitology" (pp.23-24);
- [6] Ney, Paul: The Paleovisitology Project (pp.29-32);
- [7] Ney, Paul Rubtsov, Vladimir V.: Open Letter of the Initiative Group (p.4);
- [8] Page, D.E.: The International Heliospheric Study (pp.25-26);
- [9] Ney, Paul: Editorial (p.3).

This is an editorial information of the Paul Ney Verlag, Publisher of this Journal.

Size of Articles in IJPV 1(1), 1991				
Item	size	No. words	words/KB	References
	(KB)			(No.)
[1]	22	3298	149	15
[2]	22	3 5 48	161	3
[3]	16	2372	148	8
[4]	13	2090	160	1
[5]	7	1014	144	3
[6]	23	3519	153	1
[7]	7	778	155	-
[8]	8	1053	150	-
[9]	5	815	163	-

NOTE: The size in KB (= 1024 Bytes or characters) is only approximative here while the words/KB values are rounded up to the next integer.

Authors who were more than once mentioned in the references of these articles:

Avinsky, V.I.: 2 times (in: [1], [3]);

Freitas, R.A.: 2 times (in: [1], [5]);

Rubtsov, V.V.: 5 times (in: $[1] \times 2$, [2], [4], [6]);

Sagan, Carl: 3 times (in: [1], $[3] \times 2$).

Works that have been quoted more than once:

(A) Avinsky, V.I.: Methodological Aspects of the Search for Traces of a Space Paleocontact. Manuscript 1979 (in Rusian).

mentioned in: [1], [3].

(B) Rubtsov, V.V. (et al.): The Declaration of the Initiative Group of the Scientific Investigative Committee on the Paleovisit Problem. IJPV Vol.1, No.1, pp.5-9, 1991.

mentioned in: [2], [4], [6].

(C) Sagan, C.: Direct Contact Among Galactic Civilizations by Relativistic Interstellar Spaceslight. Planetary and Space Sciences Vol.11, No.5, pp.485-498, 1963.

mentioned in: [1], [3].

Profitable Themes for Paleovisitology

by

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Abstract. This work discusses certain themes and problems of established fields of study and relates them to Paleovisitology, a new developing interdisciplinary field of study. The discussion, investigation and/or solution of these themes and problems respectively, having in mind the paleovisitological point of view, would be beneficial to the concerned fields. The themes discussed here are (or belong to): International Heliospheric Study and Astronautics; Multiple-Purpose Planetary Vehicles; History of Geological Structures; Human Sensory Perception, ETIs & UFOs.

(Received: 12.10.90)

1. Introduction

Paleovisitology is a new developing field of study aiming at the theoretical and practical investigation of possible past extraterrestrial (ET) visits (with habited or non-habited spacecraft) in our Solar System or on the Earth as well as at the search for their traces. See [1] for a first many-sided and also historical discussion of Paleovisitology.

Paleovisitology has a pronounced interdisciplinary character, this fact calls, especially during its build-up, for an analysis of its relationship with other fields of study. The discussion of a theme or the solution of a problem of some field of study might prove to be very profitable for Paleovisitology, while some questions raised by the paleovisitological research might prove to be new and equally profitable for other fields of study.

One way approaching the goals of Paleovisitology is to try to see and/or understand the concerned subject matters through the eyes and the minds of potential ET visitors. This leads in practice to a (sometimes reciprocal) paraphrase of the considered themes or problems. Considering, for example, an issue of the terrestrial space technology, a new dimension or aspect of the considered problem is exhibited by asking how the ETs would formulate and solve it. It is quite likely that similar or even identical problems would be solved in different ways by completely different candidates. Similarity of initial conditions, when considering and formulating a problem, is already a kind of constraint for the solution and it is questionable to what extent they could "prescribe" the solution.

The terrestrial space technology is certainly not a measure when trying to evaluate some more advanced solutions of its problems. A solution would exhibit, in any event, relevant trails of the civilization providing the considered solution. One way of investigation and comprehension of the historical or archaeological finds is to compare them with available terrestrial products, this

holds both for the general science of History and for Paleovisitology. But one limit of this approach is the dependence on the contemporary technological level, during the investigation; the other limit is a methodological or systematical one consisting of the disregard of other possible ways of thinking and work. It is a challenging task to try to understand the inhabitants or producers of an ET spaceship visiting the Solar System and their tasks as well as the problems they could meet

This is a discussion paper attempting the investigation of the interfaces between Paleovisitology and some established fields of study. In the sequel, pronouns like We, Us, Our etc. would stay for our present terrestrial civilization, while They, Their etc. would stay for intelligent ET beings. ET denotes, as usual, extraterrestrials and ETI the ET Intelligences. Another abbreviation used here is SPW: sensory perception window.

2. International Heliospheric Study (IHS) and Astronautics

The August 1990 issue (No.63) of the ESA Bulletin [3] is practically a special edition about the joint NASA & ESA Ulysses mission to investigate the heliosphere above and around the Sun, especially in regions which are hardly accesible for the terrestrial observation; the article by D.E. Page presents a concise review of The International Heliospheric Study emphasizing on the Ulysses mission (see reprint in this IJPV issue).

The Ulysses space probe reached already the Outer Space aboard the US Space Shuttle Discovery and is practically under way (Earth orbit: October 1990, Jupiter encounter: February 1992, South Solar pass: June-October 1994, North Solar pass: June-September 1995). The scientific harvest of this mission would consist mainly of data about the Solar heliosphere and might unfetter a revolution in our knowledge. This exploration would be profitable for our everyday life: a practical goal is to place some space probes in orbits around the Sun,

they would provide us with continuous information and thus with an early warning system in view of the many-sided Solar influence on Earth.

These news would be equally profitable for our Astronautics: the design of Sun observing authomatic space vehicles and of their orbits could be optimized if (continuous) accurate data about the properties of this medium are available (the creators of Ulysses took already into consideration whatever We know). The same arguments hold, should manned space vehicles (requiring a special protection against radiation etc.) travel one day through these regions.

Protection is obviously necessary for authomatic space vehicles also: vehicle control electronics and other observation devices must be "insulated" against the damaging influence of the medium. Our vehicle protection technology is a more "mechanical" one and We rely mainly on a multiple layer "protecting peel" made of special materials. "Energy shields" resisting to radiation or Solar wind etc. seem to be still Science Fiction; there are, however, even plans to provide a spaceship with a thick protecting coat of asteroid matter. These considerations lead us today to an appropriate travel strategy: Our space vehicles should avoid strong radiation zones (e.g. the Van Allen belts) and cross quickly less dangereous or problematic zones.

A better knowledge of the heliosphere (which could be extrapolated to a certain extent to the influence sphere of other stars) would enable Us to formulate an inverse question and to seek for a first answer: how would a hypothetical (habited or not habited) ET space vehicle approach and enter the influence sphere of a star and reach its planetary system (if it exists)?

Leaving by side the extreme (hypothetical) case where the ETIs posses a perfect spaceship and They do not need to pay attention to the properties of the medium, We should conclude that They must investigate the concerned stellar influence sphere and choose an optimal trajectory minimizing the protection efforts. Of course, this would cost time and They might send out smaller propulsed authomatic & remotely controlled space vehicles surrounding the Sun and gathering information. They would avoid, perhaps, approaching and entering this influence sphere above the stellar poles, where the direct radiation proves to be very strong; this argument alone would call to enter a (tiny) space slice containing the ecliptical plane. But the (periodically) changing properties of the medium are to be observed also. It is equally important to consider a long time history of the properties/behaviour of the heliosphere when discussing hypothetical past visits. Discussing the "possible ETI strategies to operate in our Solar System" many authors formulated convincing ideas or hypotheses which might be of use even for Us, Terrestrials, during the exploration and exploitation of Our neighbourhood. One idea was to look for possible bases coupled with an asteroid or just revolving in the Asteroid Belt. Another idea was to look for space probes "parked" in (stable) Lagrange points of some body systems in our Solar System; such

locations might serve as convenient long time places of observation and such a device would require less energy to correct/improve its position. Such detailed discussions of possible ETI operations within the Solar System would call for an investigation of the probable way to get here and appropriate scenarios would provide Us with a better understanding of the problems that possible visitors could face.

We admit that Our present space technology is not appropriate for interstellar travels; because of the lack of effective propulsion systems, we still rely on "gravitational sailing" for Our interplanetary missions. A very important task in space technology research is the discovery and implementation/use of a practical propulsion system enabling us to shorten the travel times when space vehicles are sent to targets within interplanetary missions. Thus it seems that it would not be wise to ask: how would a terrestrial spaceship (designed according to our technology) approach, enter and manoeuvre in the Solar heliosphere? But we can still consider this question in a hypothetical case and try to answer it depending on the protection and propulsion facilities of a hypothetical spaceship. I believe that the manocuvre problem of a hypothetical ET spaceship in the Solar heliosphere is of interest and its discussion would be beneficial for Paleovisitology.

3. Multiple-Purpose Planetary Vehicles

We are still at the begin of the begin, the true begin of the investigation of the Solar System would come when We will have some reliable and somehow propulsed interplanetary vehicles. A similar remark holds for the issue of planetary vehicles, both for one-time or multiple use. The term "planetary vehicle" shall be understood in the sequel as denoting vehicles designed and built

- (a) for orbital missions around a planet or its satellite or
- (b) for one-time or multiple shuttle missions between the orbital station and the surface of the celestial body or
- (c) for motion or just static stay on this surface.

(In any event, the concept of planetary surface must be quite malleable.)

Generally speaking, the current problem is that We design and produce a special dedicated planetary vehicle for every mission. Our landing vehicles reaching the surface of the Moon, of Mars, of Venus are just different and their creators adapt them to the "local" conditions; see for example the laborious work by G. Scoon et al. discussing an entry and descent vehicle for Saturn's largest Moon Titan [2]. The same remark holds generally for the planetary vehicles of class (c), We have Lunohods and prototypes of Marsmobils etc. For the time being, it is to expect that further planetary vehicles aiming to reach the surface of other celestial bodies in our Solar System would be designed and produced according to the related conditions. It might be admissible to skip over class (a) for orbiting planetary vehicles could be conceived today on a quite standard basis, irrespective of the conditions on/of the target celestial body.

From the point of view of hypothetical ETIs sending out a habited or not-habited spaceship to investigate a specific star and its (perhaps existing) planetary system, the problem of having dedicated planetary vehicles for every particular configuration of conditions might have no sense. In case of the Solar System, a huge spaceship with a cargo consisting of a set of planetary vehicles for every planet or moon "here" seems to be hard to conceive and would be nonsense in Our eyes. Moreover, the creators of an interstellar spaceship cruising in the Galaxy and visiting stars could not carry a fleet of planetary vehicles for any hypothetical celestial body.

The question is, how They think and what They do in order to cope with the various celestial bodies and related surface and other conditions which They could find on Their way. One answer or solution would be to have a set of modular devices which could be assembled to form a dedicated planetary vehicle for the investigation of a given target. Another solution is to have a smaller fleet of multi-purpose planetary vehicles covering or agreeing with a main range of planetary conditions. These solutions would have to rely on a suitable classification of hypothetical planetary conditions and this is possible only on the basis of a large comparative research.

Raising for Us the problem of multi-purpose planetary vehicles would lead to a better understanding of our own Solar System and might be beneficial for the long range plans for its investigation also. And last but not least, the related (very complex) research would provide Paleovisitology with necessary instruments also.

4. History of Geological Structures

An early (literary, phantasy, Science-Fiction and scientific) scenario of an ETI visit to the Earth is characterized by the assumption that the ETI come to see and explore the Earth as well as to interfere somehow with its biosphere. In case of a hypothetical exploration visit, We could evaluate to some extent what They could have seen here: We could enumerate whatever We know about the general history of Earth and this is our "partial" answer. One could pick out some astronomical epoch also and describe whatever We know about the considered time.

An interference with the biosphere would be much more problematic to track down, one needs first of all a hypothesis about the nature of an artificial (voluntary or accidental) interference. Artificiality is, however, a problem of its own and a first dimension of its definition would be represented by the nature of the author of a supposedly artificial act. If a terrestrial animal builds itself some kind of housing, then: is this an artificial act or not? This question hints to consider two distinct cases: intelligent and non-intelligent living beings. And then, the very definition of intelligence is questionable. Is it possible to draw up or wise to look for a border separating intelligent beings who are capable to act and to create "true artificial" products? In view of Our understanding of the natural world, We believe anyway that a deep abyss separates human intelligence and intelligence

properties of animals on the Earth. The intelligence problem is, however, not the main subject of this work.

A very specific and also likely scenario would be that They come to the Earth needing something: ores, minerals or any other (raw) materials. In this case, the history of natural ressources or wealth of the Earth or of its geological structures would represent a first source for Our related investigation. It is a task within Geology to draw up and investigate or discover this history of materials on the Earth. An investigation of this history having in mind the paleovisitological point of view would be beneficial for this new field of study.

Asking what They might be looking for, one should investigate equally the relationship between the Earth and other celestial bodies in our Solar System. Is it really necessary to land on the Earth or could They find what They need in the Asteroid Belt or in comets etc.? Could there be any reason for processing these mining products on the Earth? Assuming that mining activities took place on the Earth during early times, one must consider the theoretical and practical methods to find traces of such activities. Further, a hypothetical spaceship designed according to Our knowledge of practical and theoretical astronautics could be used as a model in order to ask what kind of raw materials would its inhabitants and the ship itself need.

The next issue would be the hypothetical landing site on the Earth with its continuously changing surface. This site could be, in principle, everywhere on the Earth: its location (solid soil, water, snow field etc.) depends on the art of the landing facility, while there is no reason to believe that They would land necessarily near a planned observation or mining site. Thus They might land on a convenient place and make trips to other places. Asking about likely places to find Their rubbish or trash, the answer ought to be the same: practically everywhere, even if a clever speculation could point to a likely location.

5. Human Sensory Perception, ETIs & UFOs

One main task of or within Paleovisitology is to develop a (continuously improved) methodology to identify ET traces. The first problem occurs on the comprehension level: having a strange find, We might ask if this is an ET artifact or another indirect ET trace. Thus We wish to understand and realize some property or aspect which constitute a hint to an ET origin.

The next problem is that We must ask ourselves if We would really perceive the ET or other object in front of Us. The human sensory perception plays here a decisive role. We have a certain number of biological sensors, each sensor has a specific and practically quite limited range of observation. In other words, We have a multi-dimensional sensory window and investigate the real or natural world through this. Further, Our biological sensory window changed during the history and differs even from one individual to another one; one

example is the case of a hunter living for a long time in the jungle — he would develop or widen the range of some of his sensors.

Finally, We widened our biological sensory window by using artificial sensors, while some sensors could be improved by training. One could always imagine a human being sitting in an observation cockpit and watching on some displays additional information about his neighbourhood or environment but we do not need in our everyday life this permanent large window. In addition, we can and usually make use of the very fine or wide range sensors of domestic or other animals. The additional environmental information is transmitted to Us, very often, on the basis of Our knowledge; e.g. sometimes we learn of a coming rain or earthquake seeing how some animals behave.

The discussion of the human sensory perception window (SPW) includes the pathological aspect. Some peoples simply do not have the "full window", some are partly deaf or short-sighted etc. And it is often pathological in Our society to have such a somehow reduced SPW. On the other side, some peoples exhibit a "pathologically large" window and there is an interesting example for it. It happened that some peoples complained of hearing some noises, since nobody else has heard the noise, it has been concluded that the first ones were mentally ill and they need appropriate treatment. In certain cases, subsequent investigation showed later that the "patients" complained in fact about a hypo-function of their ears, they really did hear something (a cry or some other noise). It is interesting to observe here that in certain religious communities holiness was attributed to certain forms of mental illness or it was required to protect individuals claiming to hear or to see something that others could not perceive.

Now, it would be a form of "homo-centrism" to believe that an ET being or object or trace has necessarily to appear in Our SPW. Something might "walk around" outside of this window. Since We usually do not walk around with a "sensory Mae West" permanently enlarging Our SPW, Wc might miss or fail to observe some appearances of the real world which might prove to be ET traces. For example, some ET device buried under a thick stratum of soil could emit acoustical wawes which We do not hear and a special radiation to be observed only by using a Geiger counter etc. A part of the terrestrial biosphere around or above this device may feature some anomaly, e.g. of the plant growth or colour etc., but one could realize, understand and explain this anomaly only on the basis of the discovery. Generally, We do not dig everywhere where some flowers are different from the other ones on the field.

Evidently, a sighting within or outside of Our SPW does not represent necessarily an ET trace. Some unknown properties of the mater or some unknown natural processes or phenomena could be "visible" only outside of Our SPW, therefore such sightings would call for an appropriate scientific investigation. At this level of the unusual sightings within or outside of Our SPW, the connection with the Unidentified Flying Object (UFO) subject matter appears to be relevant. Leaving by side the spaceship-interpretation of (some) UFOs, the attribute "flying" is a hint that (still) unusual athmospheric phenomena are to be considered and investigated, even if sometimes related terrestrial (surface) traces are reported, e.g. burned in and/or radiating circles.

In certain cases, unknown natural processes might take place in the athmosphere being visible just outside of Our mean SPW. Assuming that the SPW of some peoples becomes or might become larger in specific cases, one could formulate a work hypothesis explaining (some) UFO sightings: the observers, being in the state of an enlarged SPW, just managed to notice some natural athmospheric phenomena. For example, a modification of the electrical/magnetic field of the athmosphere in a certain area might cause some unusual processes while equally triggering an enlargement of the SPW, so that the observers actually see something, even if observers standing outside of this particular area see nothing. Further, underconscious processes in the (lucky) observers might lead them to "decorate" the observation with other features, e.g. identification as a spaceship or airplane with alien passengers etc.

Nevertheless, an appropriate discussion of the human sensory perception window having in mind the points of view of Paleovisitology or of the ETI Contact theories would be very beneficial, for some ETIs or their technology or traces could be visible just outside of Our SPW. Moreover, such a theory could refine Our understanding of ancient reports describing unusual sightings (some of them could have been just UFOs in Our sense).

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. Search for Paleovisit Traces: General Principles and Problems

by

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Abstract. We consider the general logical principles of the search for and analysis of paleovisit (PV) traces. Analysed are the central methodological problems of Paleovisitology: (1) ambiguity of textual and iconographic evidence, (2) absence of a well justified and efficient theoretical model of sought-for objects and (3) vagueness of the criteria of "anomaly" of extra-terrestrial artificial objects against the Earth's cultural background.

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1. Some introductory remarks

What is to be sought for, where and how? Undoubtedly, these are currently the key questions of Paleovisitology.

A paleovisit is a temporary presence of an extraterrestrial civilization (or, more likely, its detached part, an "expedition") on the Earth in the past. The only source of information on a PV can be its traces, i.e. any objects on the Earth that are somehow associated by origin with the PV and thus contain some information on it.

There are two possible types of Paleovisit traces:

- (A) direct traces, i.e. material remains of an extra-terrestrial (ET) expedition (remains of extra-terrestrials, their equipment, "memorial signs", "message bags" etc.) and
- (B) indirect traces, i.e. traces of activities of extra-terrestrials in objects on the Earth, that could be observed at various levels:
- physical and chemical (e.g. technogenic traces of abnormally high radioactivity),
- biological (e.g. traces of genetic manipulations in terrestrial organisms including Man),
- mental (memory of an ET expedition contained in oral and written texts as well as in representations; knowledge borrowed from extra-terrestrials and embodied in the terrestrial culture).

Generally, a PV investigation should include stages of selection, reconstruction and identification.

It is natural to search for PV traces in the continuously enriched treasure house of historical sources (in the broadest sense of the word): archaeological finds, ancient texts, pictures etc. Thus, we are, using certain preliminary (if not intuitive) criteria, to separate the sources that can prove to be PV traces. Then, by analysing each source, the object of the past (being reflected in the source) should be reconstructed by

historical (archaeological, ethnologic etc.) methods. After this, it "only" remains to ascertain that the reconstructed object is really related to a paleovisit, as it was assumed first. Such an identification is to be realized by comparing the object with the theoretical model of the expected features of an ET expedition (call it ET-model) and with the knowledge on terrestrial objects of the past (T-model) having similar appearance.

This is certainly a general scheme. Everything will prove much more complicated in reality. Analysis of the first attempts to comprehend scientifically the Paleovisit Problem and also the scientific criticism of the "Ancient Astronaut Theory" shows that in the search for PV traces we face the following unique problems.

2. What type of traces can be convincing?

It is not always possible to ascertain what real facts were reflected (if at all) in myths, legends or rock drawings etc. with the reliability required for Paleovisitology. As a rule, interpretation of such sources is ambiguous, with two or more equally likely versions.

It was understanding of these difficulties that led C. Sagan to the conclusion: «A completely convincing demonstration of past contact with an extra-terrestrial civilization may never be provided on textual and iconographic grounds alone» ([7], p.497). Sagan's idea is that only finding of an extra-terrestrial artifact will be absolutely convincing. It is supported by F.D. Drake: «It appears that there is absolutely no choice in this matter but ... to require material evidence of clearly non-terrestrial origin. ... Thus we establish the criterion that an undeniable artifact is a necessary and sufficient condition to prove a direct contact» ([5], p.344).

Although obviously reasonable, this opinion is not free of restriction. Firstly, the above cited concept could not provide the basis of an effective research. It is unclear how we shall search for an "undeniably non-terrestrial artifact", what properties it should have, what will distinguish it from terrestrial artifacts etc. It was not

without reason that Drake observed that special search for such an artifact would have been inefficient and it remained to hope for finding it by chance.

Secondly, such direct traces are indeed the most evident and the most desirable, but are not inevitable traces of a palcovisit. Extra-terrestrials could, but were not obliged to leave intended signs of their presence. It is not reasonable for us to expect an ET expedition to have necessarily left accidental traces, e.g. pieces of equipment, lost or spoilt. (The fact that our manned or unmanned flights to other planets always leave there earthian hardware is rather an evidence of a comparatively low level of our technology.) Finally, if some material traces did remain after an ET visit, they may well have been destroyed.

Since we do not know what kind of conceivable traces of a supposed paleovisit have really survived, we have only one way to follow: study the whole possible range of traces, improving the methods of information acquisition from textual and iconographic sources (which incidentally would be beneficial to the sciences dealing with them) and also trying to provide mutual complement and cross check of sources of various types. It seems also that we can expect comprehensive study of indirect traces to result finally in finding the decisive, direct traces, i.e. an ET artifact ([6], p.97).

3. How identify what we do not know?

There is up to date no justified and efficient ET concept. However, it is easy to formulate the general model of what we are after. We are to find, in historical sources, true information of (1) intelligent beings of (2) ET origin; the latter attribute can be suggested by reports that

- (a) the beings come from the Outer Space and/or
- (b) they are biologically distinct from terrestrials and/or
- (c) they had knowledge and practical means that essentially exceeded those of the terrestrial culture of the time.

If we use, however, this model for practical search, we shall see soon an overflow of false PV traces, for almost every mythology or religion mentions communication between "skydwellers" and inhabitants of the Earth, or nonhuman but rational beings having supernatural power... The initial model is too abstract to be efficient.

How shall we develop a more specific ET-model? For the present we can only do it by analogy with our civilization. For example, the technology of a visiting ET civilization is supposed to obey the laws of Physics, Mechanics etc. that we know and besides the equipment of visitors should be adapted to the terrestrial conditions (e.g. flying vehicles should be designed according to Aerodynamics). Hence, it seems reasonable enough that ET facilities should be generally similar to ours.

But in practice this idea is easily reduced ad absurdum. Proponents of the "Ancient Astronaut Theory" found ancient representations of "sputniks", "astronauts in space-suits and helmets with antennas", "lunar vehicles",

"lunar modules" (like the lunar module of Apollo-11), "tanks", "pistols", "walkie-talkies" etc. However just the "striking similarity" in each such case makes us regard the analogy as misleading, because only a civilization leaving the terrestrial civilization far behind is capable of an interstellar flight to visit the Earth. Proceeding from this transparent reason, the follwing criterion was formulated long ago: a discovery of old time pictures or descriptions of objects looking similar to space or other devices of our civilization today «testifies, however, paradoxically against the idea of space visitors and calls for a different explanation ([2], p.6). This criterion lacks in, though, so to say, "quantitative" certainty. Indeed, all serious researchers agree in that we may not expect any "excessive" likeness between a sought-for extra-terrestrial and the modern Earth technologies, but what measure is to be applied to lay the boundary beyond which the similarity is "admissible"? All these remain unclear now. For example, C. Sagan maintains that space visitors could not employ rockets, landing sites or nuclear weapons ([8], p.206). This does not seem undisputable; however, arguments in such a dispute would be rather intuitive. This problem requires a serious theoretical elaboration.

4. How define the "true anomaly"?

Identification is a difficult task not only because we have no concept of the sought-for objects. Also, it is not so easy to use the T-model, that is the body of knowledge of undoubtedly terrestrial objects of the past.

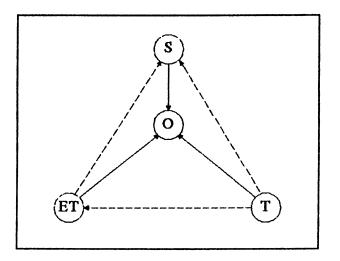
Search for PV traces should naturally be oriented towards everything that does not conform with its historical context. V. I. Avinsky formulated the "technological criterion": «we should search in the past for "odd" elements of technology ... that are obviously not proper to the historical epoch, that are, so to say, several orders higher than the level of the terrestrial technology of the times ([3], p.21). This author added later the "information criterion", namely: pick up phenomena of culture containing «exceedingly complex information, featured by a level of knowledge unexpectedly high for the epoch in question and not rooted in its ([4], p.21). But it is easy to see that both criteria are in fact particular compared with the general criterion of an "alien character" of the object of the past with respect to the terrestrial culture.

The difficulty of practical application of this criterion stems from the fact that our knowledge of the Earth's past is an evolving system. Not infrequently, new finds or discoveries (like the "Baghdad electric batteries" or the "calculating machine" of Antikythera, "deciphering" of Stonehenge by G. Hawkins and other developments of Archaeoastronomy etc.) essentially contribute to our awareness of the past knowledge and means of Man. And what first seems "anomalous", "historically illegitimate" finds later its place in the more accurate picture of the human history.

As suggested by experience, it is rather illusory to hope to find cultural and historical phenomena, whose anomalous character (suggesting extra-terrestrial origin) would be quite "evident", "indisputable" and obvious to everybody. Extra-terrestrial origin could not be ascertained without thorough direct study of the object in its relationship with the historical context and its analysis in comparison with other typologically similar objects. It seems that the anomalous character will be proved, if it appears impossible to trace a continuous evolution from undoubtedly terrestrial objects to that under study or to find its reasonable place in a typological series of undoubtedly terrestrial objects.

5. The resulting logical pattern

The positive results of our consideration lead to the following pattern of analysis of a suspected PV trace:



Here S is the historical source, O the object of the past, ET and T the ET-model and the T-model respectively. The pattern represents the logic of the study, it does not prescribe the sequence of operations (which can vary according to the particular situation) but suggests the main rules of analysis.

The S-O operation consists in reconstruction of the object of the past from the data of a surviving source. It also expresses the important requirement: identification is to be done to an object restored to its original state, cleared of all distortions of information on it. Identification has to involve necessarily comparison with both models. A proof of a paleovisit can only be an object which shows "sufficient" adequacy to the ET-model (ET→O) and simultanously "sufficient" inadequacy to the T-model $(T\rightarrow O)$. Similarity of the object to the expected features of an ET-expedition will only be convincing provided that there are no similar features in the Earth society of the time. And vice versa, it could not be a proof of a paleovisit if the object of the past is "misterious", "anomalous", but we are not sure that these anomalous features naturally fit into the concept of an ET expedition.

The other operations are auxiliary and optional. We have mentioned that it is possible in principle to make up an idea of certain features of an ET expedition proceeding from the existent features of the nowaday terrestrial civilization, by extrapolating their anticipated course of

development to the future (T→ET). As regards the ET→S and the T→S operations, the following is to be taken into consideration. Ideally, the procedure of reconstruction of an object of the past (S→O) requires a method based on knowledge of information encoding and storage in the given type of sources but independent of premature hypotheses on the object's nature, so that the result should not be artificially fitted to our desire. And it is only after such "unbiased" reconstruction of the object, that its rigorous identification is warranted.

However, this is an abstract and often positively unrealistic pattern. Even the selection of candidate sources is based on hypotheses on the nature of the objects of the past which they may have reflected and which are not yet formally reconstructed. Besides, processes of reflection of the reality in sources are so intricate, that researchers often choose a simpler way; namely, they transfer to the source data their knowledge of objects which could have been reflected in it and, if these data correspond with some model or other, they assume the identification to be completed, ascribing all the unfitting features to distortion in reflection, subsequent alterations of the source information etc. Such a technique is methodologically imperfect, though in some cases it may prove inevitable.

The described pattern represents certainly the simplest case. In practice, the required operations may be much more complex (e.g. in analysing a system of traces). And besides, each of the above operations involves overcoming of a range of particular problems. Some problems may find a solution when dealing with specific facts, but more general studies are also needed. As pointed out by M. M. Agrest, one of the pioneers of Paleovisitology, the search for and study of PV traces «will require development of special methods and invention of new means of analysis that will be doubtless valuable in themselves» ([1], p.540).

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On Arguments of Theory of Knowledge in the Discussion of ETI-Concepts

by

Paul Ney

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Abstract. Arguments of the Theory of Knowledge are related to the hypotheses that terrestrial life and intelligence have an extraterrestrial (and in case of the latter: artificial) origin. The conclusion is that these hypotheses could lead to Agnosticism. The reduction of intelligence to a purely genetical explanation is criticized too, supporting equally the evolution factor. A systematic listing of axioms rounds up the paper.

(Received: 20.02.90)

1. Introduction

The basic hypotheses and goals of the ETI-research (ETI= ExtraTerrestrial Intelligence) as well as of the related literature in the domains of the Science Fiction or of cultural respective non-scientific theories like the Ancient Astronaut Theory (AAT) etc. are strongly connected to the sciences concerning the origin and development of life and intelligence on Earth and/or in Universe. These sciences and other related theories are closely related to the position of Man in Universe and some of them may interfere directly with human society. Moreover, some consequences of certain theories might prove to be fatalist ones and thus have a bad influence on us. For example, the science fellow could not draw up a border between his philosophy of life and his research work: philosophical and more methodological principles play a decisive role on the border of the scientific knowledge when seeking new ways to solve a problem or when designing & constructing a theory explaining new phenomena of the Nature. The present work is practically self-contained and discusses some generally known notions. Thus only one reference item is listed; an appendix rounds up this paper listing axioms and abbreviations (some of them are explained only in the appendix). See [1] in this issue for an elaborate discussion of Paleovisitology with comments concerning the history of AAT/AAS also.

I wish to discuss here the relationship between certain hypotheses on life and intelligence, as considered within the scientific approach to the ETI-question and the (non-scientific) AAT, and some arguments of the Theory of Knowledge. Gnosticism, understood as the opposite to Agnosticism, is considered in the sequel as an optimistic axiom or theory about the future of the Mankind. It seems that a certain agnostic contents of AAT has not been largely discussed up to date and this is one goal of this paper. I consider the following couple of hypotheses supported not only by many AAT adepts but by some science fellows as well:

- (1) Life came down to Earth from Universe (Outer Space);
- (2) Terrestrial Intelligence (TI) is a product of (artificial) genetical engineering undertaken on some species by "mighty" Extraterrestrials (ET).

Some (widely known) scientific finds hint to (1), e.g. detection of organical matter in some interstellar dust clouds or in meteorites respective cosmic dust on Earth. But such hints are still not enough to claim that developed ETL does exist or has found a new existence on Earth. And we are still missing a proof for the existence of ETI, thus (2) remains a "quite abstract" hypothesis. For the time being, we have even no definite explanation for the origin of TL or TI. (1) and (2) remain, anyway, valid hypotheses or suppositions deserving investigation and their discussion is relevant for Palcovisitology also.

2. Genetics versus (1) and (2)

In a weaker form of (2) it is assumed that ETIs did just so much genetical engineering on some terrestrial species (ape-man) as necessary for the redemption of intelligence. But even so, an important question could not be ignored: Could intelligence be reduced to a genetical definition and/or be the product of only genetical manipulation done on some species?

Some other related and similar questions would be the following ones: Could a feeling be reduced to a steady state of the biological system called human being? Could thinking be reduced to configurations of a biological computer — our nervous system?

Genetics developed to a mature science and genetical engineering is no more science fiction. Many properties of the living beings can be explained in terms of genetical code and the investigation of the meaning and role of genetical code elements is a permament research problem. That way a work hypothesis has been set up by science and science-fiction fellows as well, it was to be

expected: a living being might and can be identified with respectively explained by its genetical code.

The absolute interpretation of this hypothesis could be called "Genetism" and it would claim that Genetism is the last and highest possible level in understanding life. I believe that Genetism would prove to be a stage in science development the way Cartezianism and Mechanicism were at their time. Future science will show the limits of Genetism, Nature may prove to be more complex as it might be seen through Genetism.

Because of these reasons I believe that (2) leaves an open door to Genetism. A scientific approach discussing (2) should admit that the intelligence of living beings is more complex than just a genetic code although it could and might be influenced by genetical engineering.

3. Evolution versus (1) and (2)

Evolution theory became equally a major widely recognized science about the development of Earth and of the terrestrial nature although it still has opponents even within the science community. I support the theory that evolution takes place in Nature and has a positive value by the trend of species to adapt themselves to their environment. Evolution does not need to be continuous, jumps and catastrophes may occur but they should be considered and understood within the framework of a higher evolution level where an appropriate nature law has to be revealed. This is a further axiomatic standpoint.

(1) and (2) deny in fact the hypothesis that TL and TI are the product of an evolutionary process on Earth although they do not state explicitly that Earth alone would not have been able to produce TL and TI by evolution.

With respect to evolution chances of genetically influenced living beings one should recall our own experience in genetical engineering. Genetically produced or influenced living beings (may) become a part of the living world and of the evolutionary process. They will join the struggle for life and existence obeying to the corresponding rules of evolution.

4. Gnosticism versus (1) and (2)

Our knowledge of Earth and Universe, further our experience of social and biological evolution led to a valuable philosophical axiom, that also constitute a strong work tool in science; let us name it "Gnosticism":

(3) Man is able to understand and investigate the material and immaterial Universe.

"Agnosticism" simply denies Gnosticism and is supported by some theologies as well claiming that Man could not understand everything since only God would be able to this.

In my opinion, (1) and (2) throw a pessimistic view on our human society, their extreme interpretation would be to claim, in fact, that neither life nor intelligence are of terrestrial origin. Stating straitforward that intelligence could appear following a manipulation of the genetical code, (2) might lead quite easily to Agnosticism — a likely consequence of (2) is that those ETI producing TI did just so much as enabling us to have an intelligence quotient (IQ) up to a certain level; adepts of (2) do not doubt that human intelligence developed during the history. Thus (2) invites to ask whether those "ETI-doctors" presented us or our intelligence with the donation of an ability to an unlimited development. Assuming we received only a limited IQ would mean that (2) contradicts (3) thus leading to Agnosticism.

Such an Agnosticism conditioned by (2) would be very unpleasant. We even could not assume to reach some goals of the related science fields, namely to find ETIs or to reach a contact with them or to prove that ETIs visited Earth or the Solar System in (a distant) past. How could we understand those ETIs who left us a limited IQ? Or did those "ETI-doctors" leave us enough IQ in order to understand them? Adepts of the "artificial limited IQ-hypothesis" would be well adviced to grasp on Gnosticism at least for sake of the ETI-research! And the last sentence in the previous section 3 would hint that Man would still have a chance to develop and Gnosticism can be accepted even if (2) would be true in its worse form: the ETI-doctors left us here with a limited IQ.

5. Gnosticism on a cosmic level

Even if (1) and/or (2) are to be taken for true, Gnosticism would present a problem on a cosmic level for the whole universe. There are some questions to be stated and discussed: Assuming (1) is true, what is the origin of ETL? Assuming (2) is true, what is the origin of ETI?

I would plead for an extrapolation of our Evolution and Gnosticism Principles from Earth to ETL/ETI and generally to Universe. This would be the only reasonable way to understand the Universe in agreement with our historical and scientific experience. We should also assume that our ETIs are a product of some ETL evolution even if they might have visited Earth and did genetical engineering on some species producing TI. In other words, the best hypothesis would be to assume that Gnosticism holds for UI, even if some UI do genetical engineering on some other UL forms.

Talking of the Universe level we might think over the philosophical consequences of the Big Bang Theory stating that the Universe started with the big blast. Assuming a sudden start of the Universe we may also ask whether some other elements of the Universe are the consequence of a similar sudden start. Did Life and/or Inteligence also started by some Big Bang? We do not know the answer and we face nearly the same difficulty as when asking for the origin of the Universe. But our research experience hints without misunderstandings or doubts that life and intelligence are products of evolution and one should be very careful with theories of sudden or "overnight" evolution or creation.

6. Appendix

6.1. Abbreviations.

AAS = Ancient Astronaut Society, AAT = Ancient Astronaut Theory, Div = Divinity, E = Extra, Ev = Evolution, G = Gnosticism, I = Intelligence, Imp = Import, L = Life, Q = Quotient, S = Search for, T = Terra or Terrestrial, U = Universe. Let us denote Agnosticism by AG.

6.2. Listing of axioms.

Here follows a systematic list of axioms that have been partly discussed in this paper. The concept of the divine interference, assuming that everything in Nature appeared as a creation performed by a superior allmighty being, has not been discussed through this paper and the related axioms are listed for sake of completeness. (In the sequel, one assumes that life forms evolved from the material world while intelligence from/in living beings.)

TL/Ev Terrestrial life is a product of evolution on Earth. TL/Imp Terrestrial life come down to Earth from the Outer Space.

TL/Div Terrestrial life is a product of divine interference.

TI/Ev Terrestrial intelligence is a product of evolution on Earth.

TI/Imp Terrestrial intelligence come down to Earth from the Outer Space.

TI/Div Terrestrial intelligence is a product of divine interference.

TI-G TI or Man is able to understand and to investigate the material and immaterial Universe.

TI-AG oppposite to TI-G, t.i. Agnosticism.

One could state similar axioms in case of ETL and ETI and referring to a certain planet or area of Universe where they are/might be supposed to exist (replacing TL and TI by ETL and ETI respectively). But I will list here the corresponding axioms as they might be conceived in case of the Universe:

UL/Ev Life in the Universe is a product of evolution.
UL/Imp Life in the Universe may travel/move to new

UL/Div Life in the Universe is a product of divine interference.

UI/Ev Intelligent beings in the Universe are a product of evolution.

UI/Imp Intelligent beings in the Universe may travel/ move to new areas.

UI/Div Intelligent beings in the Universe are a product of divine interference.

UI-G Intelligent beings in the Universe are able to understand and investigate the material and immaterial Universe.

UI-AG opposite to UI-G, t.i. Agnosticism.

Final Note.

A first draft of this paper was ready in the Fall of 1988 and has been worked over producing this article. The related comments by and discussions with Dr. Rubtsov are acknowledged.

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List of announcements, publishing informations etc.:

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The Paleovisitology Project

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- The Paleovisitology Project is the free initiative of concerned science fellows wishing to discuss and investigate the Paleovisit Problem as well as to promote the related research activities, building up Paleovisitology as a true scientific field of study.
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- If you are interested in Paleovisitology, then please inform the Project Coordinator (see the address below) and prepare an appropriate comunication for IJPV, informing the concerned scientific community also. Of course, negative opinions or objections are equally welcome.
- If you wish to communicate scientific results in or about Paleovisitology or to contribute with any other information which could be beneficial to this research, then please consider IJPV as a medium of publication. IJPV has several thematic columns so that almost any kind of contribution might find an appropriate place.
- □ If you wish to cooperate with concerned colleagues in order to work on paleovisitological problems etc., then I would be pleased to mediate and support such activities. IJPV's Correspondence Column is open for public inquiries of this kind also.
- □ We wish to found & develop a dedicated Documentation & Information Center (DIC), including a library of relevant literature (books, journals, reprints etc.), and to convene & organize scientific meetings; another idea is to organize workshops of several weeks enabling concerned fellows to produce joint works also. Please let me know if you might be interested to attend such meetings, if you could/would support such efforts and contribute to related projects.
- Paleovisitology this new developing interdisciplinary field of study — needs a wide support and the cooperation of many science fellows and other concerned professionals. Paleovisitology shall become a valuable scientific field of study and, last but not least, illustrate & promote the high values of the human culture.

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Comment on "Paleovisitology"

by

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(Received: 23.11.90)

Fermi's paradox begs the question "where are they?" One possible answer to this is that they have been and gone; hence the notion of "paleovisits".

Conventional SETI (Search for Extraterrestrial Intelligence) work focuses on the search for ETI-generated electromagnetic signals. While potentially this can allow galaxy-wide search coverage, this approach is restrictive temporally. Even a signal arriving from the other side of our galaxy would have been sent only around 100,000 years ago — a trivial time period in cosmological terms. In contrast, allowing for the possibility of paleovisits provides the opportunity for much older indications of ETI existence, but for the present, it restricts us spatially to the Solar System. Conceivably, at some point in the future we may have spacecraft capable of exploring other planetary systems, and which, in principle, would be able to observe indications of past ETI presence in them.

However, while the concept of paleovisits constitutes a valid scientific hypothesis which is potentially capable of being tested, it seems inappropriate to convert the hypothesis into a named discipline viz "Paleovisitology". Although "xenology" has been suggested as a word for the study of ETI (cf. ref. [2]), it is not in general use. Instead, investigators talk about "SETI research" and not any kind of "SETI-ology". The existence of any ETI anywhere, past or present is after all only another hypothesis. SETI research does come under the discipline of "Bioastronomy" which is justified; organic molecules have been detected beyond the Earth in comets, on other planets and in interstellar gas clouds etc., and understanding the contribution made by comets and carbonaceous meteorites to the organic reserves of the early Earth is potentially very important in understanding the appearance of life on Earth. If nothing else, "Bioastronomy" is a field of study which relates to Earth life whether or not evidence for extraterrestrial life-forms is ever found.

The "paleovisit problem" can be regarded as essentially an archaeological one. Any claim for past ETI presence will have to be backed up by very secure evidence if the world scientific community is to accept it unequivocally; that means finding some trace or object which can only be explained as being the result of ETI activity. Thus, the "paleovisit problem" can be subsumed under the wider area of investigation, SETA — the Search for

Extraterrestrial Artifacts [2]. An artifact can be broadly defined as any substance or material, made or modified by a human being or other intelligence, or any kind of trace resulting from the technological activities (in the widest sense) of an intelligent species. Elsewhere I have enlarged this definition still further to include any kind of energy generated or modified by an intelligent technological species [3]. Thus, radio signals could be considered artifacts with this extended definition. However, for most purposes the more restricted, "material" definition is perhaps the most useful if we are looking for indications of paleovisits within the Solar System. The broader definition would become more appropriate for the detection of alien activities further afield. An obvious case would be a "Dyson sphere" [1]. The sphere itself would be very much a material artifact (or collection of artifacts), but what we would be most likely to detect with our telescopes is the altered stellar radiation spectrum emitted.

Having reduced the search for indications of paleovisits to methodologically an archaeological endeavour, that is far from saying that paleovisits should be solely the concern of archaeologists! On the contrary, as with many terrestrial archaeological finds, a whole host of specialists are called upon for detailed analyses — geologists, chemists, physicists, zoologists, botanists etc. — many of whom devote their careers to archaeological work, and therefore are called such things as geoarchaeologists, paleobotanists and so forth. Any artifact suspected of being of ETI origin should certainly receive a thorough interdisciplinary examination.

One of my first reactions to the title International Journal of Paleovisitology is to ask: "what about contemporary visits to the Solar System?" For example, we have no proof that there aren't at present small, unoccupied (as oppposed to "unmanned") alien space probes actively observing the Solar System from the Asteroid Belt, however likely or unlikely this might be. Moreover, what if an astronomer should detect some feature suggesting the technological activity of some advanced culture elsewhere in the Galaxy, or for that matter, in some other galaxy, such as one might expect of a Kardashev type II or type III civilization?

I am rather sceptical of ever finding any indications of a paleovisit on the Earth, simply from the point of view of preservation. The Earth's surface gets more or less completely recycled every few hundred million years, and in the intervening span is subject to a corrosive atmosphere, a destructive biology and physical and chemical weathering and erosion. It should also be emphasized that about 70 per cent of the world's surface lies under ocean.

While the editors clearly wish to concentrate on the possibility of past ETI visits within the Solar System, I wish to remind them of the prime evidence they are looking for — artifacts, and suggest that all potential finds from the past and the present, within the Solar System and beyond be considered as appropriate for discussion in the Journal. With this wider perspective, the Journal could perhaps be known as the International SETA Journal, or simply The SETA Journal.

However, my criticism of the term "paleovisitology" notwithstanding, I support the Scientific Investigative Committee's (SIC) goal of analyzing the "paleovisit problem" and the publication of the Journal, and hope

SIC and the Journal will represent an important addition to the SETI field.

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NOTE OF THE PUBLISHER:

Accentuations in this article were made by the Author.

The International Heliospheric Study

by

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The "heliosphere" is the cavity around the Sun that is occupied by the Sun's atmosphere. Spacecraft that have travelled out to distances of more than 7.5 billion kilometres from the Sun have not yet encountered the heliospheric boundary, and the search for this frontier, where our solar system ends and interstellar space begins, is just one of the exciting challenges of the International Heliospheric Study.

About a hundered years ago it was noticed that activity on the solar surface was frequently followed a few days later by disturbances in the Earth's magnetic field. Eminent scientists were unwilling to accept that any relationship existed between the two observations, because no law of physics could explain how the disturbances were communicated to Earth. Earlier this century, it was realised that the tails of comets looked as if they were being pushed away from the Sun in a direction that was along the line joining the Sun to the comet. There seemed to be at all times a force directed radially from the Sun.

Measurements made around 1960, at the beginning of the space age, showed that there was indeed a radially directed force. The early spacecraft detected the solar wind, ever present, and consisting of protons and electrons flowing radially from the Sun at speeds of around 450 km/s. Since the wind is radial, it is necessary to travel through solar latitude and measure in-situ if we are to sample the solar atmosphere originating in the various latitudinal regions of the Sun.

The solar wind, because it is a nearly perfect conductor of electricity, carries with it the magnetic field with which it started near the Sun. It is presumed that this wind and magnetic-field regime extends out into space to a position where the pressure it can exert is counterbalanced by the pressure of the local interstellar medium with its own gas and magnetic-field regime. The position of pressure balance may vary with time as the solar wind changes in intensity, and there may be interesting shock-wawe features where the solar wind changes from being supersonic, as it is to Earth, to subsonic as it slows down near the heliospheric boundary.

For almost 30 years it has been known that the intensity of the cosmic radiation penetrating the solar system decreases as solar activity increases and the solar wind blows harder. A simple explanation would be that the size of the heliosphere increases at these times, presen-

ting a greater barrier to the incoming radiation. However, more detailed study shows that, if we apply what we have learned so far about the solar wind from spacecraft measurements, and if we make reasonable guesses about the position of the heliospheric boundary, we still cannot explain many features of cosmic-ray behaviour.

A deficiency of spacecraft measurements to date is that they have been made in, or close to, the ecliptic plane, and are therefore almost certainly not representative of other regions of the heliospheric. The ecliptic plane is that plane in which the Earth orbits the Sun. Spacecraft launched in past years have taken advantage of the Earth's orbital velocity and of its west-to-east spin motion. To get into a trajectory perpendicular to the ecliptic plane required more energy than launch vehicles could supply. However, just as it would make little sense to study the Earth's atmosphere from the equator only, so too it makes little sense to try and understand the Sun's atmosphere using only unrepresentative measurements made at its equator. (The Sun's equator is offset by only 70 from the ecliptic plane.)

The Ulysses mission — originally called the "Outof-Ecliptic" mssion — was therefore proposed years ago
to broaden our knowledge by exploring through the
whole range of helio-latitudes. The energy now available
from a NASA shuttle launch, assisted by a pull from the
gravity of the giant planet Jupiter, will make it possible
to place the Ulysses spacecraft into an orbit perpendicular to the ecliptic, so that the solar atmosphere and the
arriving cosmic radiation can be studied together at
helio-latitudes.

This new opportunity for solar-atmosphere and cosmic-ray exploration was of great interest not only to the ESA and NASA scientists directly involved, but also to the world-wide scientific community. Consequently in 1982, at its meeting in Ottawa, COSPAR approved a coordination effort called the "International Heliospheric Study", so that interested parties could inform and guide each other in a study of the heliosphere. COSPAR — the Committee on Space Research established by the International Council of Scientific Unions - is a truly world-wide scientific organisation and is not limited to countries with spaceflight capabilities at their own.

As orginally foreseen, the International Heliospheric Study was to be centred around Ulysses and was to bring in related measurements from spacecraft in the ecliptic

^{*} Reprint from the ESA Bulletin No.63 (August 1990), pp. 78-79;—free reprint permitted by the publisher - the European Space Agency (ESA Publications Division, ESTEC, The Netherlands).

plane and from solar observatories and various ground-based facilities. When the Ulysses launch date had to be slipped due to NASA's difficulties, COSPAR decided to start the Study in any case in 1986 in order to take maximum advantage of the fortuitous constellation of Pioneer-10 and 11 and Voyager-1 and 2 spacecraft, which had originally been launched by NASA in the late 1970s to study the planets.

With their planetary missions behind them, these space-craft are now headed towards the heliospheric boundary. It is unlikely that such a configuration of spacecraft will be available again in the heliosphere for many decades. Together with Ulysses, exploring the high latitudes for the first time, these spacecraft in the distant heliosphere present us with the marvellous opportunity, in the early 1990s, of making major advances in understanding the three-dimensional solar atmosphere and how the cosmic radiation makes its way through it to us on Earth.

The COSPAR Task Group on the International Heliospheric Study, charged with organising scientific meetings and information exchange, has as its members: W.I. Axford (Germany), R.V. Bhonsle (India), S. Grzedzielski (Poland), K.I. Gringauz (USSR), M. Oda (Japan), E.J. Smith (USA), E.C. Stone (USA), K.-P. Wenzel (ESA) and D.E. Page (ESA/JPL, Chairman).

An IHS newsletter is issued from time to time and symposia have been held in Moscow (August 1987), San Francisco (December 1987), Helsinki (July 1988) and Warsaw (September 1989). Further plans include a symposium during the 1992 COSPAR meeting in Washington DC, and the 1993 ESLAB Symposium, which will be based on the Ulysses results available at that time.

NOTE OF THE IJPV EDITOR:

We decided to reprint this article by Prof. Page, which appeared in the ESA Bulletin No.63 of August 1990 (a special issue devoted to the Ulysses mission), for it is a good concise introduction to and presentation of the International Heliospheric Study (IHS) and a topical information for IJPV readers; the illustration of the original article has not been reproduced here.

IHS results would be beneficial to Paleovisitology (see also P. Ney *Profitable Themes for Paleovisitology* in this IJPV issue) and we hope to present from time to time related survey papers in IJPV explaining these benefits.

Paul Ney

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Dr. Tinko A. Eftimov:

Greeting Paleovisitology and the Journal (03.01.90)

I was pleasantly surprised to receive your letter of 16.11.89 concerning the Scientific Investigative Committee (SIC) and the Journal of Paleovisitology. I feel particularily glad that Dr. Rubtsov, with whom I am well acquainted, is with the Initiative Group of SIC on Paleovisitology.

Let me introduce myself. My name is Tinko Alexandrov Eftimov, I completed my studies at the Faculty of Physics (Section of Quantum Electronics), Sofia University in 1982. Since 1983, I have been working in the field of Fibre Optics Communications and presented my dissertation for a Ph.D. in Applied Physics in 1988. I work now as an Assistant Professor at the Department of Physics, The Higher Institute for Mechanical & Electrical Engineering, Sofia 1156, Bulgaria, doing scientific research at the "Fibre Optics & Fibre-Optics Sensors" Research Laboratory.

I have been studying the paleovisit problem practically since 1976 although I have not submitted any work for publication mainly because of the lack of a truly scientific journal, dedicated to this problem. I therefore support the Initiative Group's decision to lay down the basis of a Scientific Journal of Paleovisitology.

My interests in the domain of Paleovisitology are mainly directed towards the application of scientific methods in the interpretation of ancient texts, myths etc. Without going into details, my opinion is that for the moment a scientific interpretation of ancient myths and artifacts will provide only a probabilistic interpretation. The problem is to estimate this probability.

The approach should be interdisciplinary indeed. Therefore the Editorial Board of the Journal should consist of specialists covering the whole range of scientific activity: Astronomy, Archaeology, Anthropology, Physics, Chemistry, Biology, Linguistics, Mathematical Linguistics, Etnography, History, History of Religions, Philosophy, Technology, Space Technology and Astronautics etc. When papers are submitted, the number of referees should vary from one to maximum three for cases when the manuscript is highly interdisciplinary. Of course, referees should be anonymous.

In the nearest future, I shall try to prepare and submit the first papers to IJPV. Believing that the New Year 1990 will be a fruitful year for the scientific community engaged in the Paleovisitology field, I remain yours sincerely,

Dr. Tinko A. Eftimov Mladost-2, Bl.205, D, Ap.76 Sofia 1199, Bulgaria

Paul Ney:

Reply to a comment ([1]) (03.12.90)

The terminus technicus "Paleovisitology" has been introduced & used by Soviet colleagues and we agreed to keep it. The "baptism" of a new field of study is always problematic and should remain a matter of discussion during its build-up; in practice, some names are a complex linguistical construction due to the wish of its creators to characterize the field by its name. Moreover, modern science is much more complex than the classical science with its quite rigid borders between the individual disciplines: new pronounced interdisciplinary fields of study emerge continuously and the choice of a proper scientific terminology become a problem of its own.

"Paleovisit" should denote the visit of an ET (habited or authomatic) spacecraft to the Solar System or to the Earth, possible during the distant past. Such a visit could include even a contact between ETIs and Terrestrials. Paleovisitology should cover the investigation of the theoretical and practical possibilities of a paleovisit, the search for paleovisit traces as well as of the problems of direct contact between intelligent civilizations. This complex task requires a dedicated field of study. An ETA in the Solar System is already a paleovisit trace and by this SETA would be a part of Paleovisitology. IJPV will certainly publish scientific considerations about a hypothetical contemporary ET visit or related hints also.

The name of IJPV has been already registered and an ISS Number has been allocated to the journal. It is always possible to change the name of such a journal and the Editorial Board will certainly consider any related comment or proposition. For the moment, we wish to go on with this name. IJPV would cover mainly the developing paleovisitological field of study and a competition with other journals covering other results in

the ETI research is not intended. But we would greet review and other papers about other fields of study if they prove to be beneficial to Paleovisitology, for example a work discussing astronomical observation methods enabling the identification of an ET spacecraft in the Solar System.

Archaeology in Space - defined perhaps as the accommodation of classical Archaeology to sites in the Outer Space or on Celestial Bodies — would be also a pillar of Paleovisitology. There is already a related applied remote sensing research - computer investigation of cartographic pictures of Mars — as quoted in [2]. (Some authors use the term "Space Archaeology" denoting remote sensing methods using orbiting space probes in support of archeological investigations on the Earth, this in analogy to the "Aerial Archaeology" using ground observation with airborne devices.) Concerning the Earth, there are reports of strange anomalous finds telling of obviously manufactured objects made of special alloys which were apparently never used during the history known to us. We wish to publish research results about such finds also, partly as an exercise in developing a methodology for the investigation and explanation of anomalous finds.

References

[1] Holmes, Diane L.: Comment on "Paleovisitology", UPY Vol.1, No.1, pp.23-24, 1991.

[2] Rubtsov, Vladimir V. et al.: Declaration of the Initiative Group of the Scientific Investigative Committee on the Paleovisit Problem, IJPY Vol.1, No.1, pp.5-9, 1991.

Paul Ney Postfach 102747 D 3500 Kassel 1 Germany

Dr. Vladimir V. Rubtsov:

Sensory Perception Window

(10.12.90.)

As a whole, it is a very interesting and worth-while hypothesis, but I think that only a small percentage of UFO observations, which are known at present, needs such a supposition; usually, UFOs seem to be perceived "inside" SPW (with respect to paragraph 8 in part 5 of [1]).

[1] Ney, P.: Profitable Themes for Paleovisitology, <u>UPV</u> Vol.1, No.1, pp.11-14, 1991.

Dr. Vladimir V. Rubtsov P.O. Box 4684 310022 Kharkov-22 USSR

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The Paleovisitology Project: Emergence and Development

by

Paul Ney

Postfach 102747, D 3500 Kassel 1, Germany

Abstract. The emergence and development of the Paleovisitology Project from the begin of 1988 up to date is described. The project is the response to the free academic interest of concerned science fellows. Following intensive discussions about the paleovisit subject matter, an international "Call for Paleovisitology" has been released in November 1989; in June 1990, a presentation at an international scientific meeting took place. The report has four sections: Emergence of the Project, Public activities, ETI Research in Europe, Publishing activities, Relations and policies. The start of this journal - International Journal of Paleovisitology - represents a major step forwards supporting the scientific design and discussion of Paleovisitology.

(Received: 28.12.90)

0. Notations and abbreviations

Through this report, "Project" (with a capital first letter) will always denote the "Paleovisitology Project", while "Project Coordination" concerns this Project. "Declaration" means here the "Declaration of the IG of the SIC on the Paleovisit Problem" — see also [1] in this IJPV issue.

IG stays for "Initiative Group" and SIC for "Scientific Investigative Committee"; IJPV is the abbreviation of our dedicated "International Journal of Paleovisitology". As always, ET = Extraterrestrial, ETI = ET Intelligence, SETI = Search for ETI.

1. Emergence of the Project

The Paleovisitology Project is to be seen as a free initiative of science fellows who are motivated by their free academic interest in Paleovisitology. Many colleagues are concerned about the paleovisitological subject matter, wish to discuss it in a scientific way and to publish related works or comments in a dedicated scientific journal. The free/voluntary academic interest in new or unsolved problems of the research proved often to be the origin of new fields of study, as illustrated by this IJPV issue.

Exchanging opinions about the paleovisit subject matter, long time ago and prior to the begin of this Project, Dr. Rubtsov of Kharkov/USSR and I concluded that there is an increasing scientific concern about these themes. Some colleagues are interested in the criticism of the related non-scientific literature, while others do wish to contribute to the scientific discussion of these themes. But the lack of an appropriate dedicated institution and journal is hindering for the scientific discussion. The solution in this situation was the initiation of the Paleovisitology Project in order to promote and organize the related research activities as well as the publication

of a dedicated scientific journal — we decided to implement this solution.

In January 1988, Dr. Rubtsov proposed to form a small international scientific working group for first consultations, as a member of this group, I got the task of coordinating these activities. He also submitted a basic survey paper about the Paleovisit subject matter and discussions within the group followed. This was the birth of the Paleovisitology Project. At the begin, the Paleovisitology Circular, edited by me between the begin and the Fall of 1988, was the carrier of consultations within the group. In view of the comments, the draft has been modified several times and the result is the "Declaration of the Initiative Group of the Scientific Investigative Committee on the Paleovisit Problem" [1] in this IJPV issue. Thus we talk equally of the IG/SIC Coordination which is practically synonimous with the Paleovisitology Project Coordination.

The Project Coordination covers the task of addressing, informing and possibly motivating colleagues to join the scientific discussion in Paleovisitology, of promoting the establishment of the SIC on Paleovisitology and the related contacts, of preparing and distributing information leaflets or pamphlets, of addressing and motivating scientific and other bodies to support the Project etc. This is also a scientific coordination supporting the scientific discussion and other related activities in any form which may prove to be necessary.

The Initiative Group is formed by some colleagues who do support Paleovisitology as a new scientific field of study, some colleagues stated their full support for the Declaration also. Of course, IJPV's present enlarging but still provisional Editorial Board belongs to IG.

We wish to promote the organisation of an interdisciplinary Scientific Investigative Committee (SIC) on the Paleovisit Problem, a voluntary scientific institution communicating through correspondence, holding meetings from time to time and being supported by a coordinating office or person. SIC should cover the various scientific disciplines or fields of study needed by Paleovisitology, design this new field of study, point to problems requiring a solution, organise related research groups or activities and promote the Paleovisitology at scientific institutions etc. It should be also possible to obtain an academic degree submitting a thesis concerning the paleovisit subject matter.

2. Public activities

The first edition (work draft) of the "Call for Paleovisitology" pamphlet was ready in the Summer of 1989. Beginning with November 1989, I mailed copies of the 2nd edition to numerous science fellows and other concerned professionals. The editorial note contained in the pamphlet stated that full copies may be distributed within the science community (not for sale). Dr. Rubtsov got a few sets of copies and distributed them also. Our open letter from the Call is reprinted in this IJPV issue.

The second stage was June 1990. Dr. Rubtsov attended the 3rd International Symposium on Bioastronomy at Val Cenis, France, where he took the chance of introducing the Paleovisitology and the Project as well of distributing the 3rd edition of the Call to concerned colleagues. I learned of fruitful discussions about this subject matter. However, it would not be appropriate to report of private talks or correspondence and now anybody may express his opinion in the Correspondence column of IJPV or by contributing with related works.

In September 1990, Dr. Rubtsov come to me on a private work visit. We used most of this time for intensive work and discussions about the Project and Paleovisitology, designing plans and future activities etc. We agreed to start the Journal at the begin of 1991 and discussed further publishing activities also. On September 17th, we held a joint information and discussion meeting at the Göttingen Institute of the German Aerospace Research Establishment (Deutsche Forschungsanstalt für Luft- und Raumfahrt, DLR); Göttingen is at some 60 km North-East of Kassel. We met a full house, over 50 fellows attended the meeting showing interest for themes of the ETI Research and of Paleovisitology. Our goal was to introduce this new developing field of study, to present arguments in favour of and to motivate colleagues to consider Paleovisitology. Some colleagues wished to remain in contact with the Project and to obtain further related information or pamphlets.

Numerous letters with various comments about the Project and Paleovisitology reached me mainly during 1990, some peoples were against the Project but most answers were positive. While an author believed that Extraterrestrial Intelligences (ETI) represent just a dream of the Mankind, another wished that we investigate evidence that the ETIs are right now present on the Earth and observing us. It is most important to observe that numerous science fellows and other concerned professionals expressed their consideration for the Paleovisitology Project aiming at the promotion of discussions

and researches as well as of an appropriate publishing medium. Such opinions range from cautious greetings to active support submitting research papers for publication in IJPV. Here I quote some names:

* Dr. Matest M. Agrest, USSR * Alexei V. Arkhipov, USSR * Dr. Vladimir I. Avinsky, USSR * Prof.Em. James W. Deardorff, USA * Dmitri M. Dudko, USSR * Dr. Zbigniew Dworak, Poland * Dr. Tinko A. Eftimov, Bulgaria * Dr. Valentin N. Fomenko, USSR * Florin Gheorghita, Rumania * Eric Guerrier, France * Dr. Lev M. Gindilis, USSR * Diane L. Holmes, Great Britain * Prof.Dr. Dilcep K. Kanjilal, India * Dr. Vladimir V. Kizima, USSR * Dr. Igor S. Lissevich, USSR * Dr. Corrado Malanga, Italy * Dr. Yuriy N. Morosov, USSR * Paul Ney, Germany * Dr. Roberto Pinotti, Italy * Dr. Alexei M. Podshchekoldin, USSR * Dr. Vladimir V. Rubtsov, USSR * Prof.Dr. Harry O. Ruppe, Germany * Prof.Dr. Carl Sagan, USA * Dr. David Schwartzman, USA * Dr. Yuriy A. Shkolenko, USSR * Robert K. G. Temple, Great Britain * Dr. V. K. Zhuravlev, USSR *

As observed earlier in this report, the most valuable way of expressing an opinion about the Project or its proposed field of study would be to contribute to the Journal. (Colleagues who did contact IJPV Editors as listed in the pamphlet are invited to send in communications for the Journal.)

Closing this section, I wish to remark that many science fellows joined various cultural but not scientific clubs or associations discussing the Paleovisit subject matter and other themes. Some of them are active or retired researchers in or from academic or industrial research institutions, respectively. It would be a gain for Paleovisitology and for the Project if concerned specialists and science fellows would support it, but it appears that some of them give preference to the activity in such not-scientific and quite heterogeneous associations, even if they perform "true" research in other fields at their respective institution.

3. ETI Research in Europe

The ETI Research is being promoted in the USA and USSR by impressive personal, financial, institutional, technological and other means; all these remain still impressive, even if some means are subject to quantitative fluctuations. But it seems that the ETI Research is less developed in Western Europe in spite of its research capabilities or means and I am sorry about this remark. I also wrote a letter a few months ago, in fact a memorandum of title "Extraterrestrial Intelligence and the Silence of Western Europe" addressing a body of the European Space Agency (ESA) and informing also about the Paleovisitology Project; a reply is still missing. The European Centre of Space Law (ECSL), a new ESA organisation, seems to be more interested in designing international relations aboard the European Space Sta-

tion, although the ETI subject matter gains continuously, attention in the field of Space Law. However, I hope that this Project would motivate many colleagues or related institutions to consider and support the ETI Research.

It is conceivable, however, in view of the new European political scenery, that West European space bodies would take advance of the fairly good Glavkosmos prices (for launchers etc.) and afford to support the ETI Research. Thus one could hope that in the future some body of ESA or of a national space agency would provide support to the Project also sponsoring some related activities. The Project would need first a small Documentation & Information Center (DIC), office rooms with a small but developing dedicated library (documentation support means more then just gathering together a few useful books, journals, reprints etc.). Further, it would be very useful for the development of Paleovisitology to hold a workshop of several weeks where concerned colleagues could work together and even write joint papers, hold public lectures and discuss the build-up of this field of study. A candidate place could be the city of Göttingen in view of its rich scientific libraries.

A survey paper discussing the present situation of the ETI Research in Europe (except the USSR with its already institutionalized wide range ETI Research), including a "Who Is Who and What Is He/She Doing", would be a welcome item for IJPV also. Such a paper should not only quote the concerned science fellows but also those institutions where this research is done. It seems that several researchers do consider the ETI question just out of a certain academic interest.

Obviously, ESA and the national Space agencies/bodies make out the bulk of the European space research or activities. But many science fellows work & do space research within the framework of other organizations or associations or work on a contract basis for such institutions. I wonder if ESA keeps an open eye on such "alien" space research activities and believe that a concerned regional (European) consultative institution could do a good service.

4. Publishing activities

No scientific field of study could exist without a dedicated publishing medium where the results of the research are welcome by a motivated Editorial Board and could appear. These results must be present in the scientific publishing network and available to the concerned scientific community. Since the scientific paleovisit subject matter is quite young, there are little chances that authors of related (and sometimes very elaborate) works get publishing room in established journals. Thus we need a dedicated scientific journal. Moreover, such a journal might publish related interdisciplinary works, survey papers etc. which would hardly fit other specialized journals.

Discussing these aspects with Dr. Rubtsov, we decided to venture a publishing enterprise creating the journal. We would act as Editors-in-Chief and service together with an Editorial Board the related scientific communication. Having founded my own publishing house — the Paul Ney Verlag, the "International Journal of Paleovisitology" (IJPV) has been registered and we obtained an ISS Number: ISSN 0938-1147. We hope to enjoy the support of concerned colleagues, both as editors and referees. The members of IJPV's provisional enlarging Editorial Board are as follows: Dr. Zbigniew Dworak, Editor (Ul. K. Wallenroda 55/44, 30-867 Krakow, Poland) — Dr. Yuriy N. Morozov, Editor (Ul. Nizhnaya Maslovka 18 kv.27, 103220 Moscow K-220, USSR) — Paul Ney, Editor-in-Chief (Postfach 102747, D 3500 Kassel 1, Germany) — Dr. Vladimir V. Rubtsov, Editor-in-Chief (P.O. Box 4684, 310022 Kharkov-22, USSR).

IJPV will appear in one volume per year, Volume No.1/1991 will have probably only two issues while later, beginning with 1992, four volumes per year are scheduled. IJPV will exist as long as necessary for the scientific communication on the paleovisitological subject matter. It has been decided to set a lower price per issue enabling anybody to buy the journal or to order a subscription — science should not be restricted to the reading room of libraries. Moreover, anybody should find it easy to learn about the results of the related research and the scientific way of thinking. We plan to accept payed business advertisments as an additional means to improve IJPV's financial strength. Another aspect of IJPV's business policy is that authors participate in this business according to the size of their articles.

A few months ago, a colleague, the member of a SETI related scientific committee (not the IAU Commission No.51), suggested to wait with IJPV and practically to stop its preparation in favour of a hypothetical more general journal completely covering the ETI research field. He added that several SETI related scientific committees would greet such a general journal. In my eyes, the idea of such a general journal for the ETI research seems to be problematic. If the main SETI concerned organizations would decide one day that they want a journal and to form a provisional editorial board, then it would be no problem to find a publishing house managing the desired journal. But the very fact that such a journal is missing might be already seen as a hint. Some SETI activities are so specialized that related results would fit mainly a few specialized journals. Some other aspects of the SETI research are already covered in a number of established journals. On the other hand, Paleovisitology is a new developing interdisciplinary field of study requiring a dedicated journal which should contribute to its build-up. Works concerning this subject matter might exhaust a medium size quarterly journal.

The Paul Ney Verlag would support further publishing activities needed in connection with the Project and supporting Paleovisitology. For example, SIC would need an own communication medium; some information about the Project etc. would be communicated in IJPV until SIC is formed. Further, the Paul Ney Verlag would prepare, print and publish related information pamphlets/

leaflets and organize a preprint service for papers accepted for publication in IJPV or other scientific journals, if necessary. Another project is to publish from time to time collections of reprints (articles from other journals or parts of books) if they are relevant and beneficial for Paleovisitology, for example a collection illustrating the early views about this subject matter. In case of the latter project, a science fellow (as single editor) or a scientific editorial team would cover the selection of the individual items and the preparation of the volume. (There are also further sub-projects within the Paleovisitology Project with a planned publishing covering, they shall be presented in future IJPV issues; interested colleagues are invited to comment and discuss them in IJPV, to propose new activities and to cooperate managing them.)

5. Relations and policies.

Neither the Paleovisitology Project nor the Journal (IJPV) represent a crusade against the para- or pseudoscientific activities or literature concerning the Paleovisit subject matter. The Project promotes the related scientific research while the Journal is offered as a publication medium for its results. Critics of the non-scientific literature use already other channels of communication, but IJPV would publish from time to time critical review or survey papers etc. In other words, criticism is/was not the main reason for starting and developing the Project.

The IJPV Author Information leaflet states that anybody may submit a manuscript for publication in IJPV; the Editorial Board will accept any work if it represents a true scientific contribution to Paleovisitology and the concerned fields of study. This principle of every journal existing for the promotion of the scientific knowledge will be observed by IJPV also. This implies that IJPV's Editorial Board bears a special responsibility towards the fate of this new developing field of study and its credit in the scientific community. This principle calls also for an open minded consideration of submitted works, without prejudicion.

Modern society is very complex, due to the continuously increasing need for specialists for the industry, public administration etc., universities and other similar institutions turned to be factories producing (more or less) highly qualified professionals. At many institutions, the Ph.D. degree is already taken for a third degree (in analogy to M.A. and M.Sc.) and can be obtained following additional post-universitary studies. (Who knows, "Dr.habil." might be available one day as a "fourth degree" following organized post-doctoral studies...) Thus we face revolutionary changements in the society mainly during the last four decades, where the higher education turned to be mass education with complex consequences for various fields of activity. More and more persons without a traditional scientific career can approach, understand and solve problems of the scientific research. The popularization of the scientific results reached a higher level addressing also individuals with a higher qualification.

This view provides also an explanation for the emergence of numerous cultural and other non-scientific associations discussing solved or unsolved problems of the research. This is basically good but many associations of this kind do pretend that they are scientific and formulate baseless and sometimes also polemical criticism to the scientific establishment. Moreover, some active or retired science fellows (VIPs included) join and/or support such associations and thus often provide a legitimation to the others. Another aspect is the role played by racist and other similar ideas, such ideas are supported both in science and outside of it by many peoples, irrespective of their qualification. In any event, I believe that it is O.K. if a science fellow contacts non-scientific/cultural associations and promotes there the scientific way of thinking. Such intentions meet sometimes a reserved acceptance; I experienced this e.g. long time ago, in the Fall of 1984, speaking at an open meeting.

A further problem concerns the place of criticism in our modern society. There is a growing public concern about various aspects and developments of/in the society, this is good. It is important to realize that a true democracy prescribes the right of any individual to get information and to express his opinion, while this right must be seen and understood in relation with its restrictions or limits. For example, a scientific committee criticizes a military policy, while another heterogeneous public committee criticizes the euthanasia concept etc. The concerned science fellows may criticize the military establishment even if they are not military professionals but it is preferable that a wartime job is done by professional warriors. In the same way, others may well be against cuthanasia even if they are not learned doctors, while any patient on the operation table should know that it is not advisable to interfere with the surgeon. Criticism is certainly always good in our complex society but must come true and observe its relative limits.

The above remarks are relevant and also beneficial to Paleovisitology, this new developing field of study; while building it up in a systematic scientific manner, one should demonstrate understanding for the large public concern with respect to this subject matter. The message of the Paleovisitology Project and of those science fellows who do contribute to this research is that we wish to produce true science and scientific standards for the related research. The International Journal of Paleovisitology shall become the demonstration of this intention and motivate concerned science fellows to join this new field of study.

Paul Ney, Coordinator of the Paleovisitology Project

Reference

[1] Rubtsov, Vladimir V.: Declaration of the Initiative Group of the Scientific Investigative Committee on the Paleovisit Problem, International Journal of Paleovisitology Vol.1, No.1, pp.5-9, 1991.

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Hints for Authors

Submitting manuscripts

- 1. Authors are invited to mail the manuscript and the related items (e.g. pictures, illustrations, disks etc.), if any, directly to the IJPV Editorial Office of the Publisher and to suggest the appropriate IJPV column which might better suit their contribution.
- 2. It is equally admissible/possible to submit contributions via a Member of the Editorial Board, Editors are ready to get in touch with potential authors but there are serious limitations due to the individual time & work schedule. In any event, final decisions concerning submitted items will be issued from the IJPV Editorial Office of the Publisher.
- 3. The authors should confirm that the manuscript has not been published or submitted for publication elsewhere or provide details of previous publication. It is the task of the authors to get permission to submit a manuscript, if it proves to be necessary in view of work or project contracts etc. In case of multiple authors, one author should be elected to represent the others in connection with the Publisher.
- 4. Manuscripts must be in the English language. (In the future, lengthy final abstracts in one or two other languages will be equally accepted.)
- 5. Three printed (type-writer, other printers etc.) copies of the manuscript should be submitted. It would be of great help if the author could provide a 5.25" disk in XT-format with the text in ASCII-format, without margins or separating words. (ASCII = American Scientific Code for Information Interchange)
- 6. Manuscripts should be typed double-spaced with one inch top/bottom/left/right margins (for editorial notes and printing instructions). Double-spacing is desired for any text or addendum that belongs to the manuscript e.g. references, figure captions etc. Footnotes and endnotes should be avoided if at all possible but can be processed if necessary. (If such notes are contained in the manuscript, then please add an extra listing with these notes.)
- 7. The Journal employs a standardized type of text formating. The author's name appears with a minimum of designation or distinctions. The authors should state their affiliation including the address in the form in which they wish to appear. Authors publishing for the first time a paper in IJPV are invited to submit a short biografical note of some 100 words listing relevant professional and scientific personal information.
- 8. Decimal paragraphing is used. The heading should be followed with a summary not exceeding 300 words.

9. Manuscripts should be as long as necessary to communicate the desired information. The Editorial Office might suggest and expect agreement to split a manuscript into several parts if its initial length would excede 10 printed pages of A4-format.

Mathematical formulae and unusual symbols

10. Mathematical equations or formulae may be either hand-written or typed, but clarity is essential. Non-latin letters or unusual symbols should be identified or explained by spelling out their name in the margin or in a list of symbols.

References

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