

Discovery of Extra Solar Planets: What We Really See and What it seems (What actually is visible and What it seems)

Chase for Exosolar Planets: Falstart.

Discovery of Extra Solar Planets: Sensations and Severe Reality.

"The most Beautiful Theories perish, tyrannied by the ugly Facts". Гексли

Successes of a Science.

By rates of discovering of new Extra Solar Planets soon in Mass Media such Headline will appear also: "the Number of discovered **Exoplanets** has reached hundred".

And, apparently, it is necessary to welcome increase of this joyful flow. But something is restless on soul...

Impressing Achievement...

The so prompt growth of discovering **Exoplanets** all after some years requires a correct explanation. It is probable recently, when **Exoplanets** are discovered by packs, tens, there were revolutionary changes in methods of observation and detecting of **Exoplanets** and their systems? The new specialized Space vehicles for search of Exoplanets are launched into an orbit? There were unexpected discovering in the theory about a structure of planetary systems? Actually of radical changes something are imperceptible...

... Or Empty (Premature, Sudden) Sensation?

If it is impossible convincingly to explain the reason of so tremendous success, naturally arises also occasion for doubts. Obviously, in due course situation will clear up with itself. As the known poet **Михаил Светлов** (and not necessarily concerning fatal outcomes) spoke in similar cases: "the Discovering will show! "

"Discovering" shows...

It's not very desirable too long to wait, when "the situation will clear up with itself", as much as many things are clear already now.

And the occasion to this gives understanding of occurred on a basis for a long time existing, (but, apparently, "unknown" (*) to many participants of Exoplanet chase) theory - *Megaquantum Wave Astroynamics* – the essential component of *Concept of (Mega)Wave Universe* (WU Concept)

Actually. We at once shall declare some statements, which it is essential orthogonal to habitual representations of the usual conventional theory, including, - "classical" (read - habitual) the theories of planetary systems.

(*) The Reasons of this "ignorance" - in itself fact not only regrettable, but is deep and frankly describing "Life of a science". But this is other theme from the units "History of Science" or "Sociology of Science".

The Kepler periods?

The authors of sensation discoveries approve (we shall be for brevity and deeper understanding of essence occurring to apply other words):

Observable variations - periodicity of ray velocity is a certificate of orbital movement of **Exoplanets**. In other words (using the terms WU Concept and Wave Astrodynamics), its are - the Kepler periods T of orbital movement of consolidated masses of substance - celestial bodies (planets), stars, etc, set by the III Kepler Law

$$T = (2\pi/K^{1/2})a^{3/2}$$

($K=GM$ – gravitational parameter of the central body (star), a – semimajor axis of an orbit).

On our sight it is a deep error.

No – its are

Wave periods! As a matter of fact detected ray velocities in overwhelming majority bring the information on the wave periods τ

$$\tau = 2\pi a / C_* = B \cdot a \quad B = 2\pi / C_*$$

These are - periods of distribution with velocity of a sound C_* of waves (megawaves) – small disturbances of space plasma, with the greatest probability coming from physically distinguished elite (strongest - *dominate*) orbits with semimajor axes a . In Solar system a is (including) semimajor axes of *planetary* orbits [**Chechelnitsky**, 1980-2002]

Megaspectroscopy

Such display of dynamics of each *Wave dynamic system (WDS)*, i.e. The *Fundamental spectrum of the periods of WDS* (including, - planetary system) consists of *two* sets of rhythms:

- * Fundamental spectrum of the Wave periods
- * Fundamental spectrum of the Kepler periods T

These both spectra are closely connected with each other by virtue of a *Wave Resonance* [**Chechelnitsky**, 1980, 1986], but essentially are not reduced to each other and are not identical each other.

From here, in particular, (i.e. because of misunderstanding this basic distinction) in the known chase for exosolar planets followed the whole cascade of discouraging consequences, " of far going conclusions " and tremendous sensations, known in the literature, and discoveries. Growth of number of discoveries of Extra-Solar Planets - one of vivid examples of this huge desire to make the discovery, desire that is poorly controllable by directing (compelled) severe logic of the effective theory.

Discouraging *Monstrous* Consequences.

Because of that the wave periods τ (of distribution of disturbances in space plasma lengthways of physically distinguished (elite) dominate orbits) are accepted for the orbital Kepler periods T (i.e. for display of gravitational forces, of Laws of Newton and Kepler) there are surprising novels in "classical" astrodynamics.

Huge masses of internal planets.

According to representations of the standard theory, the amplitudes of gravitational **disturbances** from orbital movement of planets are proportional to masses of planets. (Generally speaking, they are

very small). And if by the authors of discoveries the really large amplitudes of the wave periods (of **disturbances**) are accepted for amplitudes of orbital (gravitational) **disturbances**, there are estimations of masses of revolting bodies (planets) in thousand time superior real masses of internal planets. It - payment for "substitution of the thesi ". But occur numerous beautiful pictures with masses of internal planets about (and exceeding) the mass of Jupiter (MJ).

The planets are - Life is not present?

The statement about existence of large Jupiter masses in a zone of (internal) planets of Earth group completely disorients the researchers expecting to meet presence Life in other planetary systems. As much as such statement does not corresponds to the validity and from the point of view of WU Concept.

Extreme Affinity to (central body) star.

Small distances of huge planets.

The theory, in which " all is possible ", quietly looks at existence of huge masses in immediate proximity from a Star.

And all this - in quiet, stationary - not in eruptive or extremely disturbant condition of a star and planetary system.

The fast rotation of huge planets

And these huge consolidated bodies rotate extremely quickly with the periods about several day long time (years) not collapsing and keeping stability of the cycle time. Surprising novels!

Improbable excentricities.

In the theories such as " the Chaotic universe ", where " all is allowed ", can certainly be and anyone large excentricities. It also is observed on the diagrams of openers of planets. In WU Concept, where all is interconnected by ratio of the Wave resonance, the regimes "anything you like" - can not be principally.

Voices of the Opponents

All the increasing flow of discoveries of **Exoplanets** does not remain without attention of a number of the professional observers having the own point of view on reliability and quality of the sensational statements.

<http://www.public.asu/edu/-sciref/exoplnt.htm>

... We are on the threshold of a new revolution. However, as is the case of many new discoveries, a monkey wrench has been thrown into the fray. Published in the February 27, 1997 issue of Nature, David Gray, an astrophysicist from the University of Western Ontario, concentrating specifically on the date and analysis of 51 Peg, disputes the discoveries of these exoplanets. In short, he feels that researchers were too fast to publish their results, which led to serios mistakes in the analysis of their spectral data.

Gray D.F. Absence of a Planetary Signature in the Spectra of the Star 51 Pegasi, Nature, 385 (6619): 795-796, February 27, 1997

Glanz J. Is First Extrasolar Planet a Lost World? Science 275 (5304): 1257-1258, February 28, 1997 <http://exoplanets.org/hd192263/hd192263.shtml>

The Faux Planet Around HD192263

Greg Henry has discovered photometric brightness variations that have the *same period* as the velocities. This strongly implies that the velocity variations are caused by starspots and *chromospheric active regions* on the stellar surface, rotating into and out of view as the star spins on axis.

Simple task for openers of Exoplanets.

Using the theory and methods of observation and discovering of **Exoplanets** (of precision Doppler spectroscopy) open, please, *practically* (instead of as a result of mental experiment) the existence of Jupiter (or any other planet) at observation of the Sun. Prove, that, detecting of miserable gravitational disturbances (on the Sun), it is possible to prove existence of planet (s) in Solar system. Such task - is obvious, necessary control and verification of used theoretical and observant toolkit. While such demonstration of plausibility and effective theory is absent.

Argument of Transit

It is interesting more steadfastly to peer and at the messages on observation of Transit (i.e. crossing by a planet of an observable disk of a star).

Whether the observable effect (phenomenon) is long-term, stable, constant, or variable in time, it is valid transitive in true sense of this word.

Also what actually eclipses a star - consolidated vast body, or, be can plasma formations. In any case, the recurrence by the independent researchers of Transit would bring in the certain clearness to the sensational applications.

Planets are not yet visible.

For orientation of the researchers leading search of **Exoplanets**, we shall formulate the statement based on the information, available at us

The thesis [Exoplanets are not yet visible]

The statements, available in the literature, about discovering of **Exoplanets** do not maintain criticism from the party of more adequate, more effective theory (first of all, - WU Concept and Wave Astro-dynamics).

Thus, -

Actually (really, with use of spectroscopic methods) is not open yet any Exoplanet (with so extreme parameters).

In connection with this Thesis, true price to numerous sensations about discovering of **Exoplanets** everyone can attribute independently.

Time and the subsequent researches, outside of doubts, will confirm validity stated by us (and probably, apparent today radical) statements.

Genesis of rhythms. Solar system.

Apparently, the Theory of Extra Solar Planets should pass the same period of standing, as well as Theory of Wave Structure of Solar system (of rhythms of Solar system). At first (period of tests and mistakes) the rhythms were counted on fingers of one hand (it there were rhythms 1d, 27d, 1a, 11a of years). The evidence of presence any of other rhythm was rejected without meditations. There is no such planet! And all!

Then it was necessary to recognize, for example, and presence of a rhythm $T=151d$ within the framework of the conventional theory (i.e. publications and textbooks). But so remained not clear, whence they occur.

The unique theory, which clearly and unambiguously explains such rhythms, is - WU Concept.

Genesis of rhythms. Far planetary systems.

Now Theory of Extra Solar Planets passes the same way of tests and mistakes. As is spoken,

Who does not do conclusions from mistakes in History, that could repeat them again.

But there is also other sad sentention:

Nobody does conclusions from History ... Now to each observable wave period (rhythm) attribute a planet.

O Santa Simplicitas!

Principle of the Sovereignty of Elite orbits.

In frameworks of WU Concept there is a statement based on an extensive observant material:

#Elite (dominate) orbits - as the physically distinguished states exist, are observed, are detected without dependence from, whether there are on them any consolidated firm bodies - planets (satellites), whether or not its are observed.

On the other hand -

#Dominate orbits, generally speaking, (in a reality) with a high probability are engaged ["a Santa place is not empty"].

Fundamental Wave Spectrum of Solar system.

First of all this Fundamental wave Spectrum can be detected, for example, by the far observer in Solar system.

This Spectrum - extremely coherent construction.

It depends only on one dynamic parameter - Gravitational parameter of the Central body $K=GM$ and, thus, only from mass of the Sun (star).

Method of Megaspectroscopy in definition of masses.

This fundamental conclusion was obvious even during preparation of the monography [Chechelnitsky, 1980] for printing at the end of 70 years.

The return statement (return task) was obvious also:

The knowledge of megaspectroscopy opens an opportunity of independent distant definition of mass [of the Central body - a star] of far astronomical system considered as Wave dynamic system (WDS).

The suggestion [a Principle of Existence of planetary systems].

Imperative of Existence of planets (satellites) (of Planetary systems).

Sovereignty of elite (dominate) orbits. Agrees (Principle) - *Sovereignty of elite orbits*- physically distinguished elite (dominate) orbits exist in WDS - without dependence from, whether there are on them consolidated material firm bodies (satellites, planet, etc.) whether or not.

On the other hand is fair

Imperative of existence of planets. From the large share of probability the dominate orbits are filled - on them there are consolidated material bodies (planet, satellites, etc.).

In other words, Planetary systems - *not exception, but extremely widespread phenomenon* in the Universe. Planetary systems - generally speaking, [usually] *exist*.

When detect a *quiet* star it is possible to be sure is, almost for certain, *planetary system*.

NB: *Whence reliance?* Let look at satellite systems of planets!

Except for planets of Earth group (practically) all **dominate** orbits of the *large planets* - *are engaged*: on them there are satellites.

The suggestion for the observers. To be convinced of validity of the stated statements it is possible to make the following offers for independent researches which are not included in " Club of openers " nowadays known "Exoplanets".

Methods of identification of WDS planetary systems.

Mass of the central body (star).

Direct detecting of a location of Transsphere.

Megaspectroscopy of the hour periods.

Extremely interesting be can, the decisive information can be brought by observations of the (mega)wave periods of stars in various ranges of lengths of waves.

The special interest represents allocation of a spectrum of the *periods about several hours*. From the point of view of WU Concept it is necessary to expect, that precision detecting of such variations, (for example, in a *x-ray range*) can spill light on true *(mega)wave nature* of stars and origin of observable rhythms (including - and *accepted for orbital* movement of **Exoplanets**).

Care and Healthy conservatism.

As to the situation with exponent growth of number of discoveries of **Exoplanets**, we believe as reasonable to adhere follower *Stimulating strategy*:

It is necessary in every possible way to welcome intensive continuation of works spent by "the hunters behind planets ".

But there is important to raise a level of a critical estimation of the new data - and not by an interdiction on the publication, but by stimulation of *open and honour discussion*, including, - and on the part of the *independent* experts (it is possible, not being the members of club "Openers of planets ").

The conservative list of Planetary systems.

In view of presence of the argued doubts concerning real discovery of **Exoplanets**, there is a following suggestion:

Let's make the *Conservative (Authentic) list of **Exoplanets***.

Also we shall include in it only objects satisfying to tested criteria of scientific reliability (instead of momentary pulses of scientific sensation).

It is possible, that first this Conservative (Authentic) list will be opened only in the future by objects observable only with use of new methods and new, more perfect, technologies (Transit, direct detecting, etc.).

It is necessary to learn to wait ...

Sad conclusion:

While the following ascertaining, unfortunately, sounds as a verdict:

Now is real (with use of spectroscopy methods). It is not open any Extrasolar Planet or planetary system.

We believe, that such conclusion focuss scientific community and wide interested public more truthfully, than autohynosis of the participants of club "The Hunters for planets".

In this connection some particular remark is possible also:

Known *The Extrasolar Planets - Enciclopedia* <http://www.obs> (as well as many others Sites) in essence, without damage can now be renamed in Enciclopedia of Wave Dynamics of Extra Solar Objects.

For otherwise it is necessary to consider this very interesting Site as *The Extrasolar Planets - Enciclopedia of Artifacts*.

In any case, well to see on such Sites and in the literature, for example, publication of all spectrum of the observable *wave periods* (without discrimination) following from the analysis of spectrum of capacity of a radiation variation of each of researched **Extrasolar** objects (stars).

India or America?

We apologize the high quality observers for the compelled so sad estimation of some results of their intense work.

With inevitability it would come to light not now, so later with accumulation of the independent information.

With the large share of reliance it is possible to approve, that the "merit" in this discord (besides of "the human factor ") – has the disorientative theory, conceptual orients of the usual system of representations. The results of the first class observation, certainly, will not be gone, though now we and do not see the **Exoplanets**.

In a consolation it is possible to recollect a far history of discoveries: Columb all life trusted that has opened India. Actually it was not India, and America.

Now observers open not Extrasolar planets, but display of the *wave periods - of components of Megaspectroscopy* – the manifestation of the wave periods of **Extrasolar** wave dynamic systems (stars). And it - extremely important step to understanding of (mega)wave structure far astronomical (and wave dynamic) systems, to detecting of **Exoplanets** similar to our Earth, to discovering the far

Exoplanets: The Hunt Continues! Swiss Telescope at La Silla Very Successful

Summary

The intensive and exciting *hunt for planets* around other stars ("exoplanets") is continuing with *great success* in both hemispheres.

At this moment? There are 63 known exoplanet candidates with minimum masses below 10 Jupiter masses? And 7 known objects with minimum masses below 17 Jupiter masses. The present team of astronomers has detected about *half* of these

Queloz D. Mayor M. From CORALIE to HARPS the Way Towards 1 ms-1 Precision Doppler Measurements, *The Messenger*, N105, Sept. 2001, p. 1-7.

Precise Doppler measurements of stars is a very efficient way to search for extrasolar planets orbiting nearby stars similar to the Sun. The *gravitational interactions between a planet* and its host star produces a *change of the radial velocity* of the star that can be detected by *Doppler measurements with precision of few ms-1*. Thanks to the effect of observations done by precise Doppler surveys conducted world-wide, 67 satellites mass less than 15 M_J have been discovered. Today ongoing surveys regularly monitor the radial velocity of a total sample of 3000 G, K and M stars (Queloz 2001).

The *detection of a planet* by the measurements of *the orbit of its host star* brings information on *the mass of planet, the orbital eccentricity and the orbital period*.

The first planet discovered orbiting the star 51 Per (Mayor and Queloz, 1995) is a giant planet on a very close orbit (4.2 days).

Other similar systems have been later detected.

The direct observation of a *transit* of one of these short orbit planets (Charbonneau et al. 2000, Mazeh et al. 2000) brought the *final confirmation of their existence*.

These planetary systems? Called "*not Jupiters*", do not fit in the paradigm of the planet formation based on the observation of our Solar System (Boss 1995; Lissauer 1995)