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Statistical Regularities of Chronology of Astronautics

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In article chronological anomaly of astronautics is described and investigated by methods of mathematical statistics. The binomial law of distribution of number of chronological coincidence is proved. It is shown, that the probability of casual occurrence of considered coincidence is rather small.

Keywords: astronautics, chronology, statistics, law.

Introduction

The founder of the doctrine about bio- and a technosphere V.I. Vernadsky noticed, that «the science history is … the tool of achievement new», and «repetition of the phenomena in time is one of the brightest displays of law» [1]. He considered development of a science and technics as the process which is subject to research by a natural-science method: «similar displays cannot be casual, and are so subordinated to weight and a measure, as movement of astronomical objects or a course of chemical reactions» [1].

The method of research applied in article, is based on the statistical analysis of chronology by means of parametrization of dates of events. Parametres are used: conditional numbers of days from the beginning of chronology N, from the beginning of year n and year's number Y. For date 4/12/1961: $n(12.04) = 102$, $Y = 1961$, $N(4/12/1961) = 1960*365 + [1960/4] + 31 + 28 + 31 + 12 = 715992$.

Properties *of intervals of time* between events ΔN, Δn, ΔY are investigated.

Informative property (coincidence) – the exact or approached frequency rate of intervals to informative codes C: $\Delta N \vdots C$, $\Delta n \vdots C$, $\Delta Y \vdots C$.

A.L. Chizhevsky is the founder of the solar biology. He one of the first investigated influence of space factors on historical process [2]. He connected accidents in biosphere with the periods of solar activity. The considerable contribution to development of space philosophy was brought by K.E. Tsiolkovsky [3].

Codes, reflecting influence of the space factor. In article correlation of parametres of chronology and factors of a gravitational constant is proved:

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$G = 6{,}67 \ldots \cdot 10^{-11}$ N·m²/kg² [4-6]. For informative research the greatest admissible integer codes are used. Therefore the constant registers in a kind: $G = \mathbf{667} \ldots \cdot 10^{-\mathbf{13}}$ N·m²/kg². Value of a mantissa **667** and the module of an order **13** we will accept for the basic informative codes. The code **666**, as the approached value for a code **667** is in addition considered.

Probabilities of performance of the informative properties are rather small. In detail probability-theoretic calculation is considered in item 2.

Multiple coincidence is priority and is allocated with underlining.

1. The Description of chronological anomaly

Anomaly "centre" is dates of the outstanding historic figure.

A.S. Pushkin – the great thinker, the academician of the Russian Academy, the historian (main historiographer of Russia with 1831).

1.1. Pushkin and Space laws

According to publications of Pushkin societies of Russia, in 1829 on a way to Arzrum Pushkin has left on storage (for 150 years) at his acquaintance, the known ataman of the Army the Don D.E. Kutejnikov archive with the description of the laws of space opened by him. Subsequently, allegedly, the descendant of the ataman became the keeper of legendary archive I.M. Rybkin (1904 – 1994), the inhabitant of the Rostov area, the graduate of the North Caucasian power institute. In 150 years, in 1979 Rybkin, giving reason for necessity to execute Pushkin's precept, has organised disturbed the Soviet authorities and received wide popularity an exhibition on a theme of opening of the ingenious thinker: Space laws, the device of cycles, history, the inorganic form of a life. According to Rybkin in archive the knowledge of cycles in the nature and a society is ciphered (Rybkin I.M. «Russian mathematical science». Taganrog. A Pushkin Science. 1997).

1.2. A phenomenon of a surname and Pushkin's date

The surname of the thinker occurs from the word "*gun*". The jet artillery is related usual artillery (the gun and a rocket on the device and an action principle have much in common). The artillery and the rocket weapon traditionally unite in one sort of rocket armies and artillery. Pushkin is the genius of the country of the first artificial satellite and the cosmonaut.

It is remarkable, that Pushkin's dates are phenomenally connected with dates of history of artillery, the rocket technics and astronautics.

Applied below a designation we will explain on an example of dates of a life of Pushkin: $N_1^{ASP} = N$ (6/6/1799), $N_2^{ASP} = N$ (2/10/1837), $n_1^{ASP} = n$ (6.06), $n_2^{ASP} = n$ (10.02), $Y_1^{ASP} = 1799$, $Y_2^{ASP} = 1837$.

1.3. Chronological anomaly of history of rocket technics

Van Gu, the inventor of the first rocket flying machine (nearby 1500, China), was lost during tests [4,5]: $Y_2^{ASP} - Y + 1 \vdots \mathbf{13*13}$.

The first large-scale application of the rocket weapon took place in India in 1792 and in a year of a birth of Pushkin in ***1799*** [4,5]: $Y_2 - Y_1^{ASP} \vdots \mathbf{13*13}$.

Tipu Sultan (11/20/1750 – 5/4/1799), Indian prince, the organizer of the first rocket armies was lost in a year of a birth of Pushkin in ***1799***:

$Y_2 - Y_1^{ASP} \vdots \mathbf{13*13}$, $n_1 - n_1^{ASP} + 2 \vdots \mathbf{13*13}$.

G. Koanda (6/7/1886 – 11/25/1972), the designer and the pilot of the first jet plane (Romania, 1910) was born next day after an anniversary of a birth of Pushkin: $n_1 - n_1^{ASP} - 1 \vdots \mathbf{13*13}$.

The first start of a rocket with the liquid jet engine has been carried out in USA 3/16/1926: $N - N_1^{ASP} + 1 = \underline{\mathbf{13*13*13}}7 * (-1 + 3)$.

R. Goddard (10/5/1882 – 8/10/1945), the designer of this rocket:

$N_1 - N_2^{ASP} + 2 \vdots \mathbf{667}$, $N_2 - N_1^{ASP} - 1 = \mathbf{13*13}69*1*3$.

The first Soviet rocket 11/25/1933 [4,5]: $N - N_2^{ASP} - 1 \vdots \mathbf{667}$.

The first intercontinental ballistic missile USSR 8/21/1957: $N - N_2^{ASP} = \mathbf{667*}66$.

M.K. Tihonravov (7/29/1900 – 3/4/1974), rocket designer: $n_1 - n_2^{ASP} \vdots \mathbf{13*13}$.

S.P. Korolev (1/12/1907-1/14/1966), rocket designer: $Y_2 - Y_1^{ASP} + 2 \vdots \mathbf{13*13}$.

M.I. Nedelin (11/9/1902 – 10/24/1960), the first commander-in-chief of Rocket strategic forces: $N_1 - N_2^{ASP} - 1 = \mathbf{667*}6*6$.

M.V. Keldysh (2/10/1911 – 6/24/1978), called in a press «the main theorist of astronautics»: $n_1 - n_2^{ASP} \vdots \mathbf{13*13}$.

H.P. Kamanin (10/18/1908 – 3/12/1982), the known chief of group of cosmonauts (1966 – 71): $N_2 - N_1^{ASP} \vdots \mathbf{13*13}$.

1.4. Correlation of Pushkin dates and founders of the theory of gravitation

Parametres of a gravitational constant are the basic informative codes. Gravitation has paramount value for the rocket technics.

G. Galilej (2/15/1564 – 1/8/1642) has opened laws of falling of bodies:

$N_1 - N_2^{ASP} + 1 \vdots \mathbf{13*13}$, $Y_1^{ASP} - Y_1 - 1 \vdots \mathbf{13}$, $Y_2^{ASP} - Y_1 \vdots \mathbf{13}$,
$Y_1^{ASP} - Y_2 - 1 \vdots \mathbf{13}$, $Y_2^{ASP} - Y_2 \vdots \mathbf{13}$.

I. Newton (1/4/1643 – 3/31/1727) has entered a gravitation constant:

$N_1^{ASP} - N_2 - 1 = \underline{\mathbf{13*13*13}} *(\mathbf{13}-1)$, $Y_1^{ASP} - Y_1 \vdots \mathbf{13}$, $Y_2^{ASP} - Y_1 + 1 \vdots \mathbf{13}$.

Remarkable coincidence for Pushkin's date of birth on old style:

$N(5/26/1799) - N_1^{IN} + 1 = \underline{\mathbf{13*13*13*13}}*(-1 + 3)$.

The gravitation law is opened about 1667 [4,5]: $Y_2^{ASP} - Y - 1 = \mathbf{13*13}$.

1.5. Laws of history of space flights

«***Explorer-1***» 2/1/1958: $N - N_2^{ASP} + 1 = \mathbf{13*103*}33$ (the first USA's satellite).

«*Pioneer-1*» (3/11/1960): $N - N_2^{ASP} - 1 = \underline{\mathbf{13*13*13}}3*(-1 + 3)$ (the first interplanetary space vehicle).

J.A. Gagarin (3/9/1934 – 3/27/1968): $Y_2 - Y_1^{ASP} = \mathbf{13*13}$, $Y_2 - Y_2^{ASP} = \mathbf{13}1$.

The first exit into an orbit of the Moon of piloted ship 12/24/1968:

$N - N_2^{ASP} \vdots \mathbf{13*13}$; $Y - Y_1^{ASP} = \mathbf{13*13}$.

The first flight with disembarkation to the Moon (1969):

$$Y - Y_1^{ASP} - 1 = \mathbf{13*13}.$$

The first space station and destruction of its expedition

Start of orbital station "Salute" 4/19/1971 was the second achievement of the Soviet piloted astronautics: $N - N_2^{ASP} - 1 \vdots \mathbf{13*13}$.

Visiting expedition has begun work *in Pushkin's birthday* 6/6/1971:

$$n - n_1^{ASP} \vdots \mathbf{13*13}.$$

Cosmonauts were lost at end of expedition 6/30/1971.

G.T. Dobrovolsky (was born 6/1/1928), the commander: $N_1 - N_2^{ASP} + 1 \vdots \mathbf{667}$.

V.N. Volkov (was born 11/23/1935): $n_1 - n_1^{ASP} - 1 \vdots \mathbf{13*13}$, $n_1 - n_2^{ASP} \vdots \mathbf{13}$.

V.I. Patsaev (was born 6/19/1933): $N_1 - N_1^{ASP} + 1 \vdots \mathbf{13}$, $n_1 - n_1^{ASP} = \mathbf{13}$, $n_1 - n_2^{ASP} + 1 \vdots \mathbf{13}$.

From the major events of a considered historical theme of coincidence are absent only for date of flight of the first artificial satellite.

1.6. The first and largest accidents rockets and astronautics of the USA

The largest accident of rocket technics of USA 8/9/1965 (rockets explosion, 53 persons were lost): $N - N_1^{ASP} + 1 = \mathbf{13*667*}(6-6+7)$.

1/27/1967 in a fire by the ship "Apollo-1" 2nd astronaut of the USA ***V. Grissom*** (was born 4/3/1926) was lost: $Y - Y_1^{ASP} + 1 = \mathbf{13*13}$, $Y - Y_2^{ASP} \vdots \mathbf{13}$.

Ship accident «***Challenger***» 1/28/1986: $N - N_1^{ASP} - 1 = \mathbf{13*13}11*(1+3)$.

F.R. Skobi (was born 5/19/1939), the commander: $N_1 - N_2^{ASP} - 1 \vdots \mathbf{667}$.

Destruction of the astronaut in a year of 200-year-old Pushkin anniversary

Charlse Conrad (6/2/1930 – 7/9/1999), the *great* astronaut, commander of 2nd crew which has stepped into the Moon, was lost as a result of accident for 59319 day after Pushkin's death: $59319 = \mathbf{13*13*13}*1*3*1*3*1*3$.

1.7. The rocket technics and astronautics of the USSR

The largest accident of rocket technics of USSR 10/24/1960 (rockets explosion). In accident the first commander of rocket armies ***M.I. Nedelin*** (its coincidence see above in section of history of rocket technics) was lost.

V.V. Bondarenko (2/16/1937 – 3/23/1961), 1st lost Soviet cosmonaut-verifier. He was born in ***100*** years after Pushkin's death.

G.G. Neljubov, 2nd lost verifier 2/18/1966: $Y_2 - Y_1^{ASP} + 2 \vdots \mathbf{13*13}$.

V.M. Komarov (3/16/1927 – 4/24/1967) was lost at end of space flight:

$Y - Y_1^{ASP} + 1 = \mathbf{13*13}$, $Y - Y_2^{ASP} \vdots \mathbf{13}$.

J.A. Gagarin (3/9/1934 – 3/27/1968) was lost in an air crash: $Y - Y_1^{ASP} = \mathbf{13*13}$.

P.I. Beljaev (6/26/1925 – 1/10/1970), 3rd died among Soviet cosmonauts flying to space: $Y_2 - Y_1^{ASP} - 2 \vdots \mathbf{13*13}$.

1.8. Gagarin and Shepard − space duel of the XX-th century

The duel's theme is sign for Pushkin's biography.

G. Dantes (2/5/1812 – 11/2/1895), the French emigrant, his contender on the well-known duel.

The given feature of the biography of Pushkin will well be co-ordinated with the drama beginning of history of piloted astronautics. Competition of the USSR and the USA in space had character of the real duel.

Dates of flight of Gagarin and day of Pushkin's duel are connected:

N (4/12/1961) – N (2/8/1837) + 2 ⋮ **667**.

The first cosmonaut of a planet was lost for **169**th year after a birth, in 131 year after Pushkin's death: $Y_2 - Y_1^{ASP}$ **= 13*13**, $Y_2 - Y_2^{ASP}$ **= 13**1.

A. Shepard (11/18/1923 – 7/22/1998) – the first astronaut of America. Conformity with Dantes's dates: $N_2 - N_2^{GD}$ ⋮ **13*13**, $n_2 - n_1^{GD} + 2$ ⋮ **13*13**.

1.9. The second space duel of the USSR and the USA

In 1966 Gagarin in group L-3 had training preparation for flight on the Moon. However astronauts of the USA became winners of new space competition. Flight dates to the Moon of the ship "Apollo-8" and Pushkin's duel are connected: N(12/21/1968) – N(2/8/1837) + 1 ⋮ **13*13**.

J. Lovell (was born 3/25/1928), the pilot "Apollo-8", his dates correspond to Dantes: $N - N_1^{GD} + 1$ ⋮ **13*13**, $N - N_2^{GD} - 2$ ⋮ **13*13**.

Gagarin was lost in a year of historical flight of astronauts (on 169th year after Pushkin's birth): $Y - Y_1^{ASP}$ **= 13*13**.

1.10. Unique duel of artificial satellites of Russia and the USA

2/10/2009 in an ***anniversary of death of Pushkin*** there was rather rare event – collision (over territory of Russia) two satellites (Iridium and «Cosmos-2251»): $n - n_2^{ASP}$ ⋮ **13*13**.

1.11. Astronauts-Afro-Americans

Pushkin's feature is his African origin.

Robert Lawrence (10/2/1935 – 12/8/1967), the first astronaut-Afro-American, was lost in an air crash: $Y_2 - Y_1^{ASP} + 1$ **= 13*13**.

Gijon Stewart Bluford (was born 11/22/1942), the first Afro-American who has made space flight: $n - n_1^{ASP}$ **= 13*13**.

Frederik Drju Greg, 1st Afro-American – the head of NASA, was born 1/7/1941 in 51714 days after Pushkin's birth: 51714 ⋮ **13*13**.

F.D. Gregori has started to supervise over NASA in 2005: $Y - Y_2^{ASP} + 1$ **= 13*13**.

1.12. The first women-cosmonauts

V.V. Tereshkova (was born 3/6/1937), the first woman-cosmonaut was born in ***100*** years after Pushkin's death.

Sally Kristen-Ride (was born 5/26/1951), the first woman-astronaut of the USA. Her coincidence on a Pushkin theme is phenomenal. S.Kristen-Ride – the bachelor of the literature, the expert in poetry. Conformity of dates S. K.-Ride and Pushkin it is perfect under the form: $N - N_2^{ASP}$ ⋮ **13*13*13**.

S. K.-Ride was born on May, 26th, and the poet – also on May, 26th (on old style). Coincidence for dates takes place also S. K.-Ride and sisters of poet O.S. Pushkina (12/31/1797 – 5/14/1868): $N - N_1^{OSP} - 1 \vdots \mathbf{667}$.

1.13. Heads of the first national space programs
Eisenhower − the founder of NASA

D. Eisenhower (10/14/1890 – 3/28/1969), the US president, carried out the general management of the first space program of the USA. He has ordered to catch up with the USSR in space competition. It posesses idea of the prospecting artificial satellites. *Phenomenal* quantity of coincidence to Pushkin's dates:

$$N_1 - N_2^{ASP} \vdots \mathbf{13*13},\ N_2 - N_1^{ASP} \vdots \mathbf{13*13},\ Y_2 - Y_1^{ASP} - 1 \vdots \mathbf{13*13},$$

$$Y_1 - Y_1^{ASP} \vdots \mathbf{13},\ Y_1 - Y_2^{ASP} - 1 \vdots \mathbf{13},\ n_1 - n_2^{ASP} + 1 \vdots \mathbf{13},\ n_1 - n_1^{ASP} \vdots \mathbf{13}.$$

NASA – the largest organisation of space researches is founded 7/29/1958 by D.Eisenhower's decree: $n - n_2^{ASP =} 13*13$.

John Kennedy − the initiator of the lunar program of NASA

J. Kennedy (5/29/1917 – 11/22/1963), the US president in 1961-63 has the direct relation to astronautics. His name carries the well-known space centre on cape Canaveral (earlier cape Kennedy). He declared space new border of the USA. For restoration of prestige of the USA he has proclaimed the program "Apollo" a national problem. *Phenomenal* coincidence for dates of the president and Pushkin: $N_2 - N_2^{ASP =} \mathbf{\underline{13*13*13}}7*(-1 + 3)$; $n_2 - n_1^{ASP =} \mathbf{13*13}$;

$$N_1 - N_1^{ASP} + 3 \vdots \mathbf{13*13},\ N_1 - N_2^{ASP} \vdots \mathbf{13};\ n_2 - n_2^{ASP} + 1 \vdots$$
$$/\mathbf{13};\ Y_1 - Y_1^{ASP} - 1 \vdots \mathbf{13}.$$

The well-known clan Kennedy is widely known for that its representatives pursues a chain of failures and tragedies. Dates of known representatives of the well-known clan it is abnormal are connected with Pushkin's dates.

Robert Kennedy (11/20/1925 – 6/6/1968), brother J.Kennedy, the senator of the USA. After destruction of the brother he has headed a political clan Kennedy. He did not become the US president, probably because has died as a result of attempt ***in 169th anniversary of a birth of Pushkin***. Phenomenal coincidence: $Y_2 - Y_1^{ASP =} \mathbf{13*13}$; $n_2 - n_1^{ASP} \vdots \mathbf{13*13}$, $n_2 - n_1^{ASP} + 2 \vdots \mathbf{13*13}$;

$$Y_2 - Y_2^{ASP =} \mathbf{13}1;\ N_1 - N_1^{ASP} \vdots \mathbf{13}.$$

Kennedy as Pushkin were lost in the prime of life from bullets of murderers.

Lee Harvi Oswald (10/18/1939 – 11/24/1963), accused of murder of J.Kennedy – symbolical Dantes: $N_1 - N_2^{GD} - 1 \vdots \mathbf{13*13}$, $N_2 - N_1^{GD} \vdots \mathbf{13}$.

He was born for 46642nd day after Dantes's birth: $46642 + 2 = \mathbf{\underline{13*13*13}}8*(-1 + 3)$.

As well as Dantes he came to Russia where too married the Russian woman.

J. Kennedy and Tereshkova's flight. In history of Pushkin duel the central place is occupied with women, sisters Goncharovs. J.Kennedy – the youngest in history of the USA the president and the hero

of set of love novels. He was lost in a year of Tereshkova's flight. Tereshkova's dates and wives Dantes E.N. Goncharova (4/22/1809 – 10/15/1843) are connected:

$N - N_2^{ENG} + 1 = \mathbf{13*13}12*(-1 + 3)$.

M.N. Prusakova (was born 7/17/1941), the wife of Osvald – "Dantes", corresponds to Tereshkova. Coincidence to flight date: $N - N^{MNP=}$ **667*(13**–1).

The head of the first space programs of the USSR

L.I. Brezhnev (12/19/1906 – 11/10/1982) supervised the first space programs of the USSR. His name has been appropriated to "Star's town". To him the rank of the Hero of Socialist Work [5] has been appropriated. Conformity of dates of Brezhnev and Pushkin is remarkable:

$$N_2 - N_2^{ASP} + 1 \vdots \mathbf{13*13},\ N_2 - N_2^{ASP} + 1 = \mathbf{13*13}65*1*3;\ n_1 - n_1^{ASP} - 1 \vdots \mathbf{13},$$

$$n_1 - n_2^{ASP} \vdots \mathbf{13},\ n_2 - n_1^{ASP} - 1 \vdots \mathbf{13},\ n_2 - n_2^{ASP} \vdots \mathbf{13};\ Y_2 - Y_1^{ASP} - 1 \vdots \mathbf{13}.$$

Symbolical French-Russian flights in a year of Brezhnev's death

Last year of a life of Brezhnev (symbolical "Pushkin") is noted to a similar case of J.Kennedy: space flight was made by 2nd wom S.E. Savitskaya (symbolical wife Pushkin "N.N. Goncharova") and 1st French cosmonaut Jean-Lu Kreten (symbolical "Dantes"): $Y - Y_1^{GD} - 1 = \mathbf{13*13}$, $Y - Y_1^{NNG} - 1 = \mathbf{13*13}$.

Flight of Savitskaya has begun 8/19/1982. Corresponding informative coincidence for date of the culprit of Pushkin duel *of N.N. Goncharova* (9/8/1812 – 12/8/1863): $N - N_2^{NNG} + 1 = \underline{\mathbf{13*667}}*(6 + 6-7)$.

1.14. Lunar expeditions − outstanding achievement of astronautics

12/24/1968 *"Apollo-8"* for the first time in history delivered the person to an orbit of the Moon [4-7]. Unique coincidence:

Pushkin: $N - N_2 \vdots \mathbf{13*13}$; $Y - Y_1 = \mathbf{13*13}$, $Y - Y_2 = \mathbf{13}1$.

Dantes: $N - N_2 - 1 = \mathbf{13*13}7*15$.

J. Kennedy: $N - N_2 \vdots \mathbf{13*13}$; $N - N_{1=}\mathbf{18837} \vdots \mathbf{13}$.

D. Eisenhower: $N - N_{1=}\underline{\mathbf{13*13*13*13}}$, $Y - Y_1 \vdots \mathbf{13}$.

Ship creation «*Moon rover – 1*» (start 11/10/1970, work 11/17/1970 – 10/4/1971) was the answer of the USSR. Corresponding coincidence also has abnormal character:

Pushkin: $Y_1 - Y_1^{ASP} - 2 \vdots \mathbf{13*13}$.

Brezhnev: $n_1 - n_2^{LIB} \vdots \mathbf{13*13}$, $N_2 - N_1^{LIB} + 1 \vdots \mathbf{667}$, $N_2^{LIB} - N_3 + 1 \vdots \mathbf{13*13}$.

2. The Probability-theoretic and statistical analysis of anomaly

Probabilities of coincidence for one parametre. We assume, that dates of a life of people and events are casual and independent from each other. Accordingly random variables are parametres of dates X_j (j = 1,2,3):

$$\Delta N = |N - N_0|,\ \Delta n = |n - n_0|,\ \Delta Y = |Y - Y_0|,$$

where the index 0 corresponds to the "central" date.

Event ***A*** (*coincidence*) is frequency rate of parametre to considered code C: $\boldsymbol{A} = X_j \vdots C$. Probabilities and characteristics of such events were investigated on the COMPUTER. It is proved, that events $\Delta N \vdots C$, $\Delta n \vdots C$, $\Delta Y \vdots C$ practically independent, and the probability of event $X_j \vdots C$ is equal $1/C$ [8-10].

Owing to independence of coincidence research of properties of dates is equivalent to sequence of independent tests (Bernully's scheme) [8-10].

Probabilities of coincidence for set of dates. For Pushkin's two dates and one investigated date there are 6 parametres ΔN_i, Δn_i, ΔY_i, $i = 1, 2$. Check of the informative properties for a number of numerical codes from which the cores are codes 13^2, 666, 667 is carried out. The big codes of a kind 13^3, 13*13*13C_1C_2 …, where C_1, C_2, … – decimal figures are considered also. For a code 13^2 checks for 6 parametres (with probability of exact coincidence $p_1 = 1/169$), and for other codes – for 4 parametres ΔN_i, ΔY_i, $i = 1, 2$ are carried out. The corresponding total probability for codes 666 and 667 is equal $p_2 \approx 2/666$.

For m dates it is carried out $6m$ checks for a code 13^2. The probability not less k coincidence with a margin error no more ε in the given series of checks is defined under the formula of binomial probabilities [8-10]:

$$P(6m, k, p) = C(6m, k)\, p^k q^{6m-k} + \ldots + C(6m, 6m\text{-}1)\, p^{6m-1} q + \\ + C(6m, 6m)\, p^{6m},$$

$p = (2\varepsilon + 1)\, p_1$, $q = 1 - p$. For each of codes 666 and 667 it is carried out $4m$ checks. The corresponding probability is equal $P(4m, k, p)$, where $p = (2\varepsilon + 1)\, p_2$.

As considered events are independent, the total probability is equal to product: $P(6m, k, (2\varepsilon + 1)\, p_1)$ $P(4m, k, (2\varepsilon + 1)\, p_2)$.

Probabilities of coincidence for one parametre and codes of a kind 13^3, 13*13*13C_1C_2 … are accordingly equal: $1/2197 \ll 1$ and $1/780 \ll 1$.

Frequencies and probabilities of coincidence for various codes and that.

Detailed calculation is described in works [9,10]. For a code 13^2 anomaly takes place. Excess of frequency of coincidence in comparison with norm much more unit. Corresponding probabilities there is less than unit. For codes 666 and 667 anomaly less obvious. Total value of probability:

$$P \approx \underline{10^{-22}} \ll \underline{1}, \text{ at } \varepsilon \le 1; \quad P \approx \underline{10^{-21}} \ll \underline{1}, \text{ at } \varepsilon \le 2.$$

The given values of probability allow to assume, that considered coincidence is not casual. For comparison it is expedient to notice, that in practice usually sufficient it is considered reliability 0,99 (probability of an error 0,01).

Conclusions

In article dates of history of rocket technics and astronautics are investigated. The research method is based on the statistical analysis of chronological data by means of parametrization of dates of events and check of the corresponding informative properties.

The phenomenon of steady correlation of dates of the major events of history of astronautics with Pushkin's dates takes place. It will be co-ordinated with remarkable conformity of his surname to a theme of artillery, the related rocket technics. Coincidence has character of law, and the probability of their casual occurrence *is rather small*.

The phenomenon reason is influence of space system ETA. Chronological anomaly is special way of an information transfer space systems. Results of research confirm ideas of the founder of space philosophy K.E. Tsiolkovsky.

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Статистическое исследование хронологии космонавтики

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В статье описана и исследована методами математической статистики хронологическая аномалия космонавтики. Обоснован биномиальный закон распределения числа хронологических совпадений. Показано, что вероятность случайного появления рассматриваемых совпадений весьма мала.

Ключевые слова: космонавтика, хронология, статистика, закономерность.