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Space Physics Practice at Ulyanovsk State University

Zhuravlev V.M.

Universat, Moscow, 2006

Ulyanovsk State University
Physics and technic faculty Department of theoretical and mathematical physic

новский государственный университет
Физико-технический факультет
Кафедра теоретической и математической физики

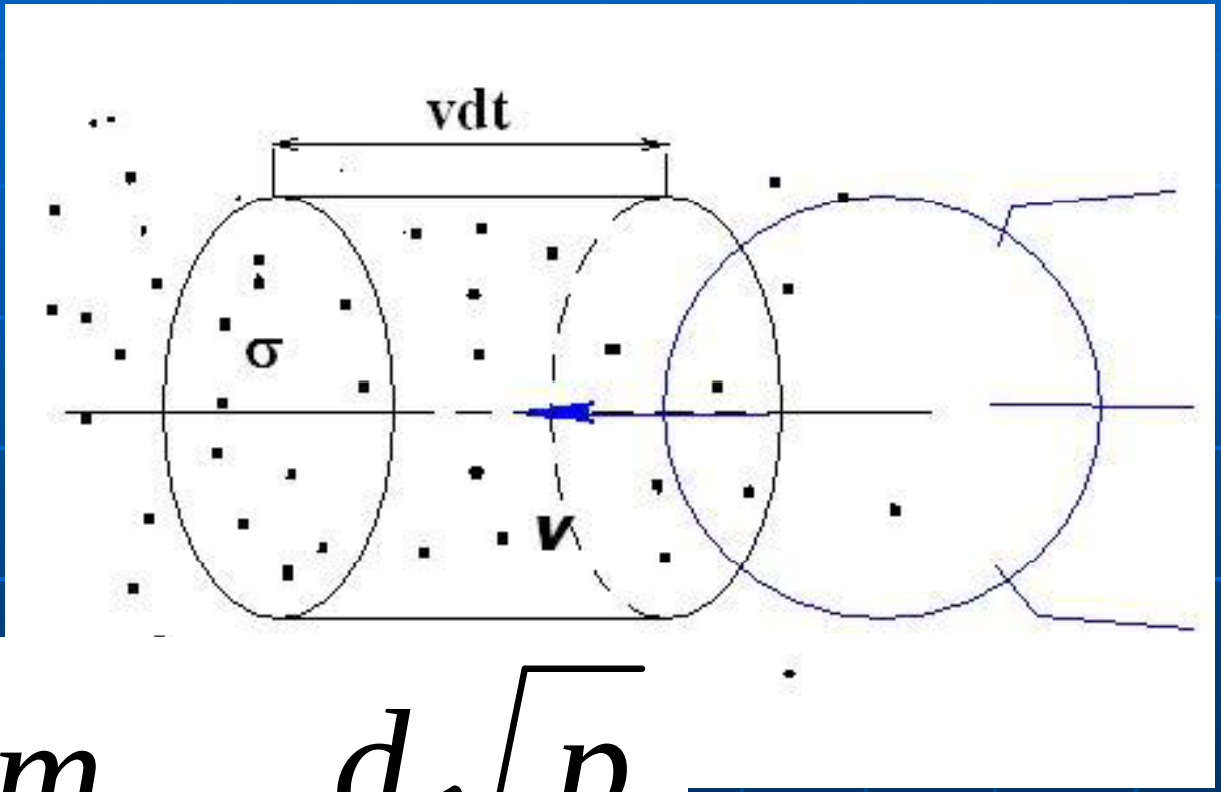
History Information

- Ulyanovsk State University was opened in 1989 as branch of Moscow State University in Ulyanovsk
- Ulyanovsk State University in 1995 became independent university

Space practicum tasks in a first version

- The estimation of atmosphere density on orbit of satellites (using NORAD data)
- The measurements of amplitude of second spherical harmonic of Earth gravitation field (using NORAD data)
- Simulation of Keplerian orbit in projection on the geographical map

Estimation of atmosphere density (Shlyapin V.S.)



$$\rho = -\frac{m}{\sigma\sqrt{MG}}\frac{d\sqrt{p}}{dt}$$

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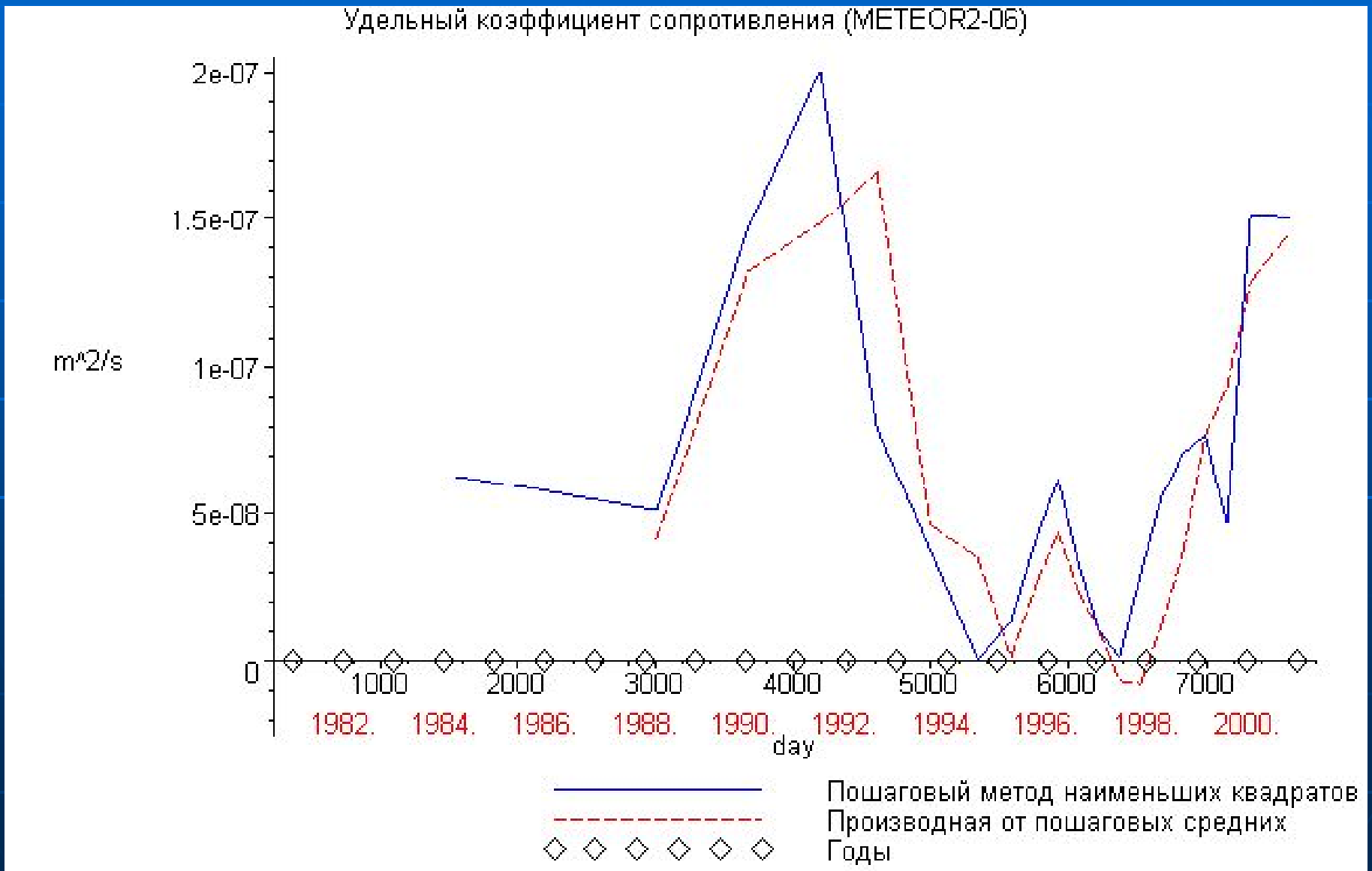
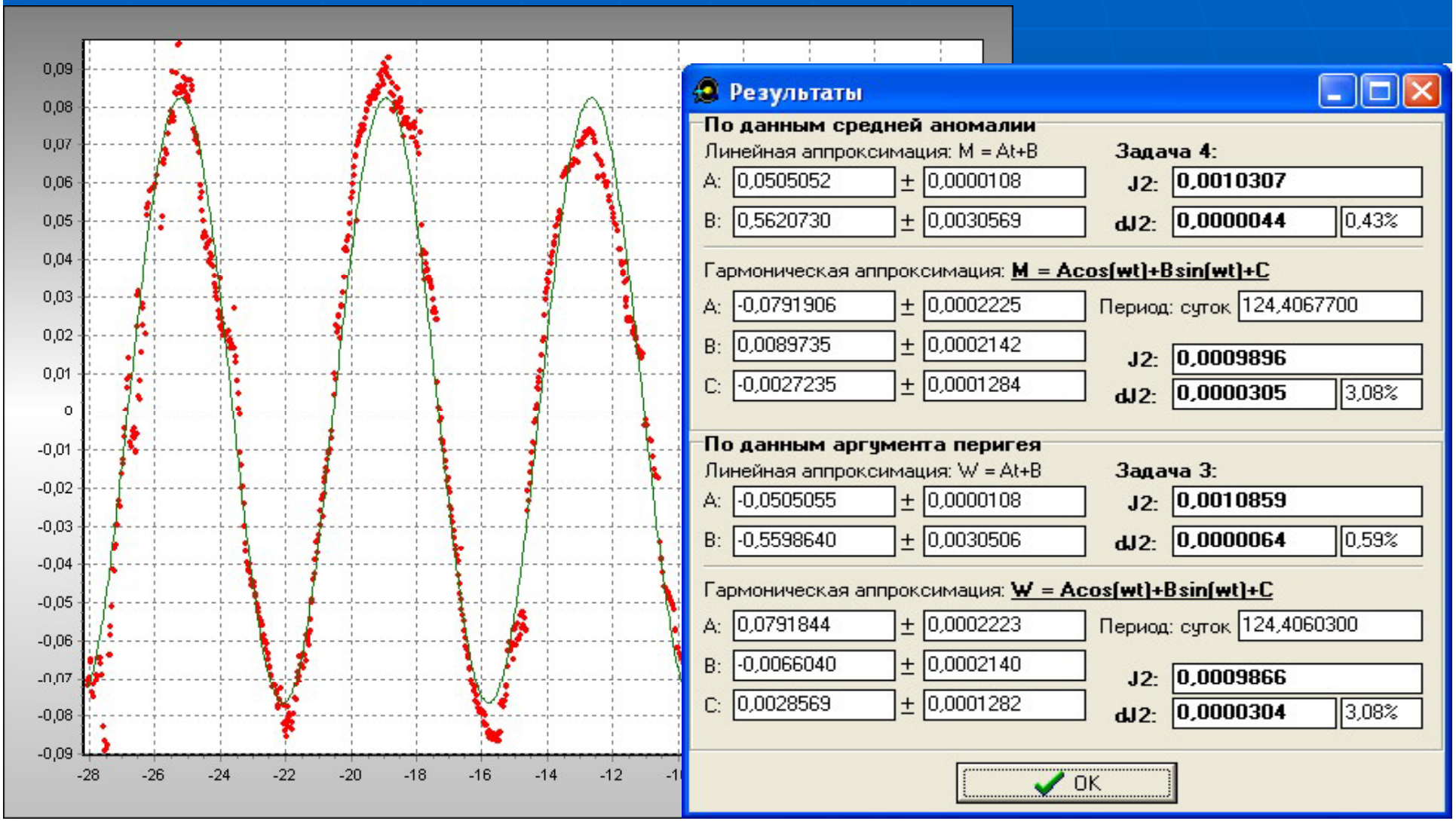
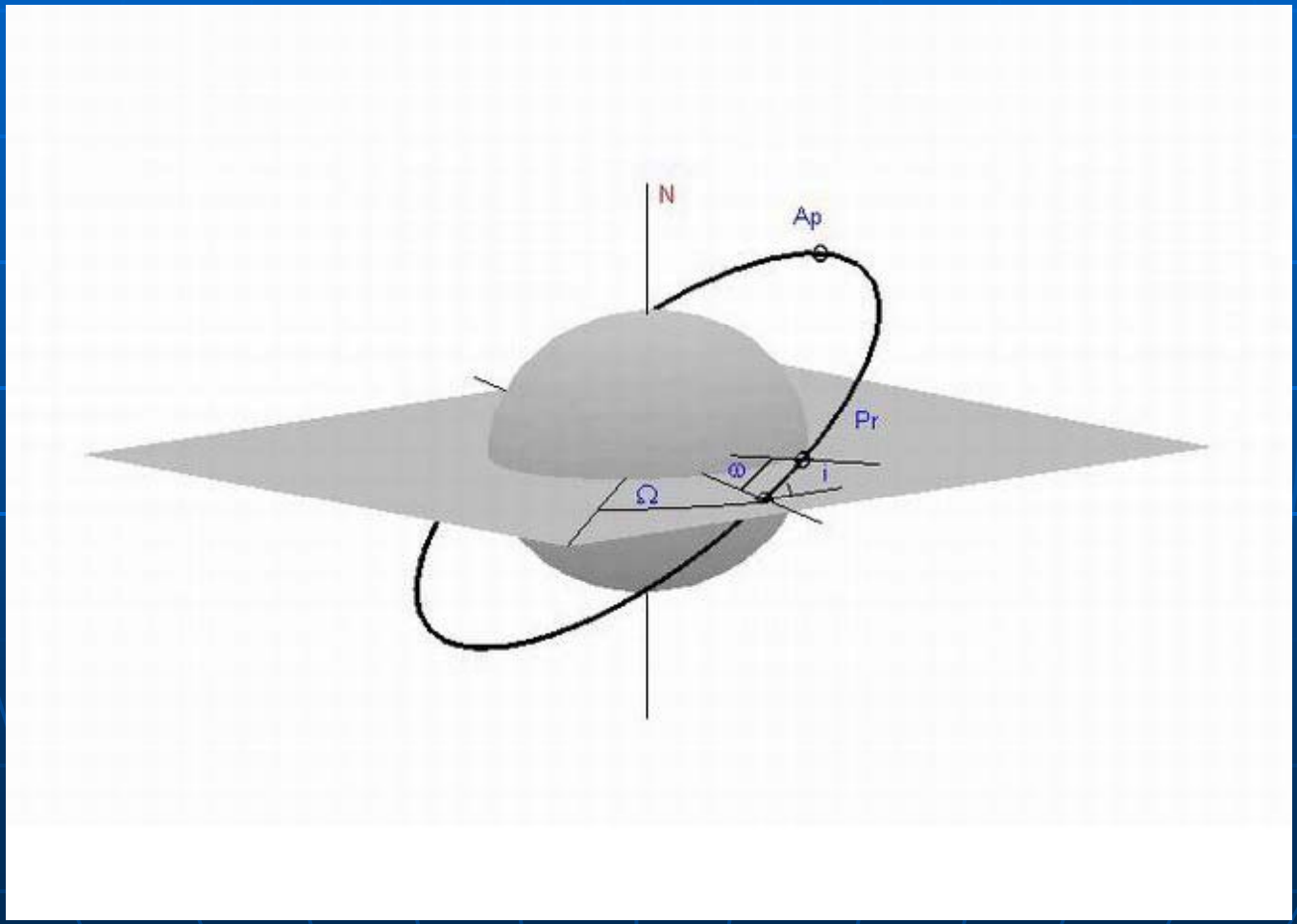
Estimation of atmosphere density



Estimation of amplitude of second harmonics of Earth gravitation field (Fundaev S.V.)



Simulation of Keplerian orbits

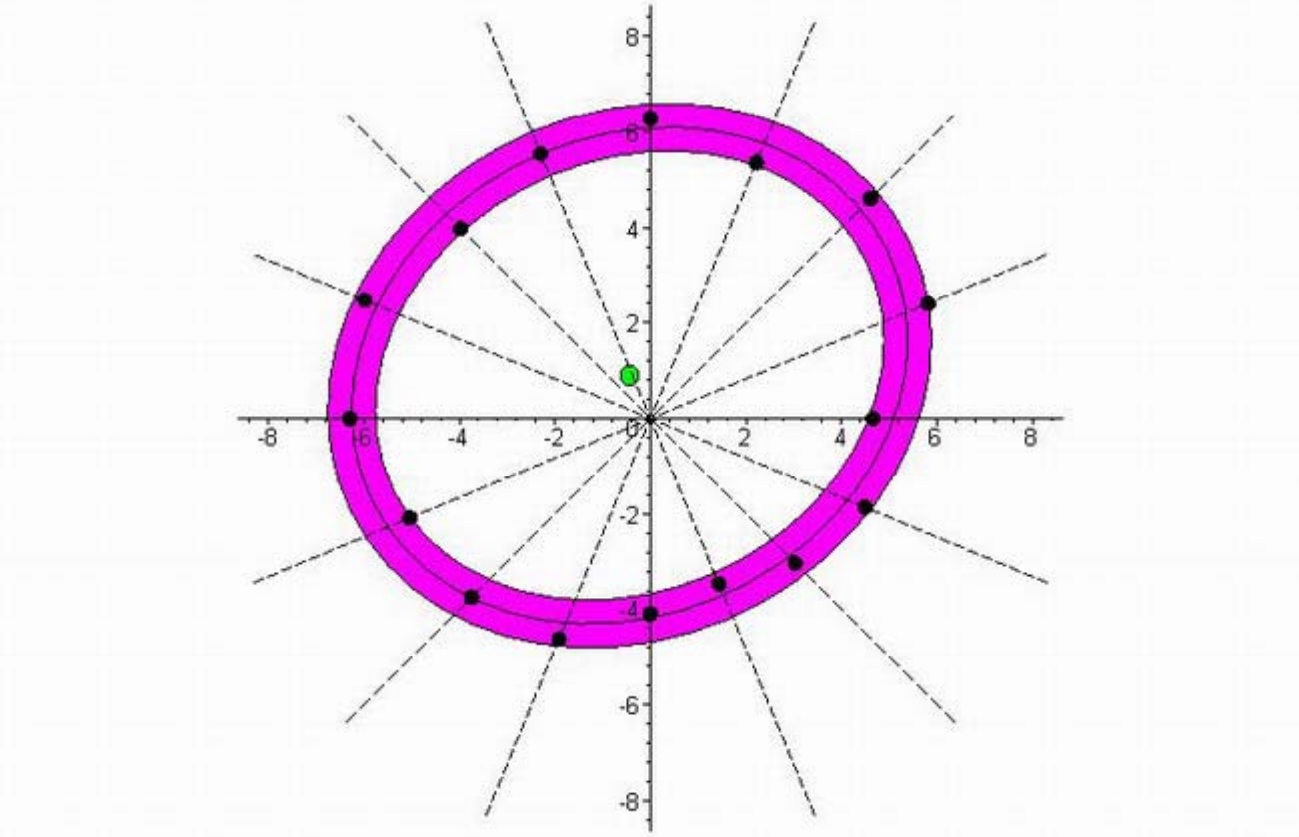


Scientific programs

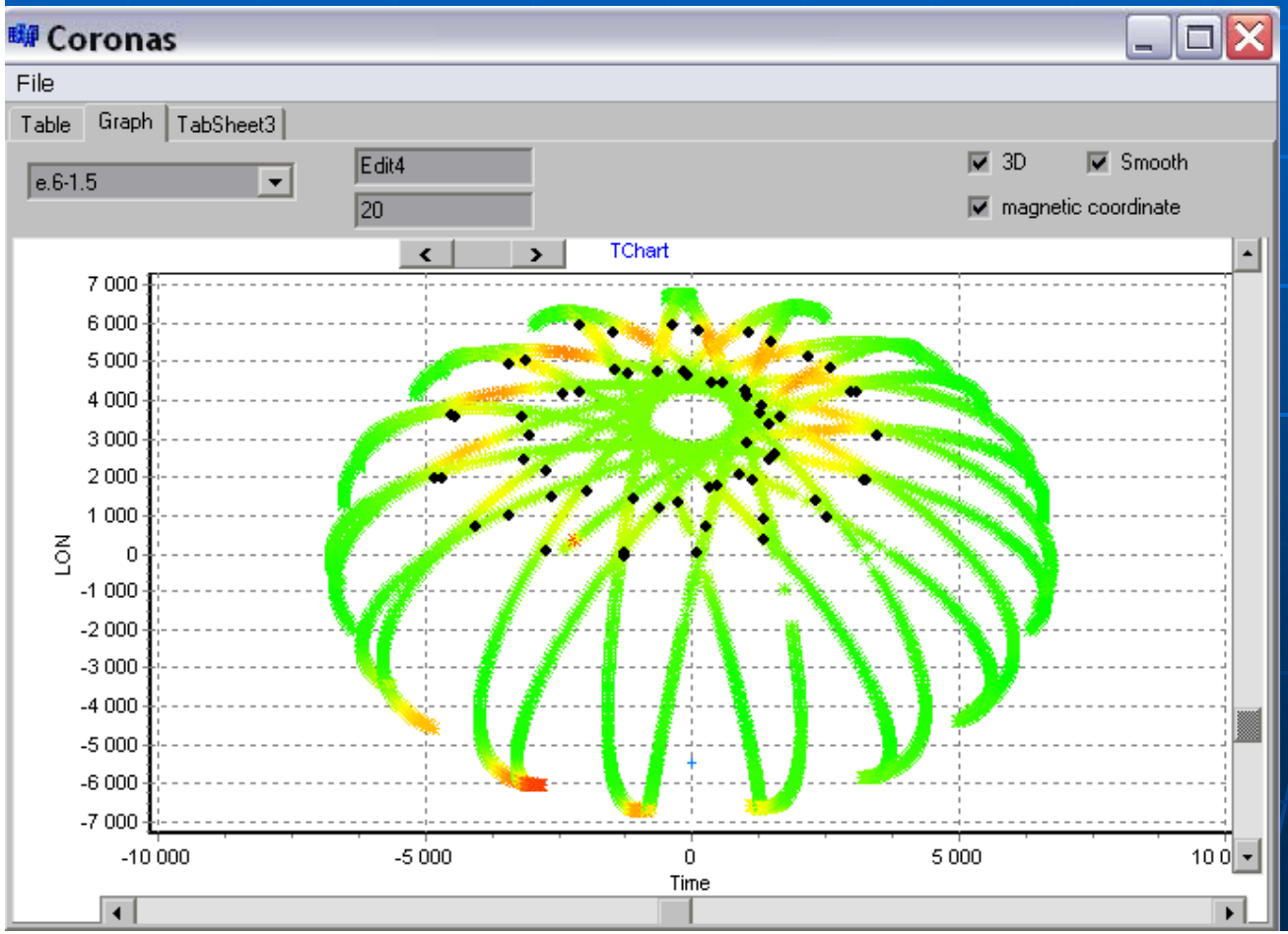
- Parameters of distribution of charged particles in Earth magnetosphere
- Dynamic of Sun spots
- Variation of magnetic field
- Spectral analysis from satellite antenna array

Parameters of distribution of charged particles in Earth magnetosphere (Slyapin V.A.)

Model of distribution



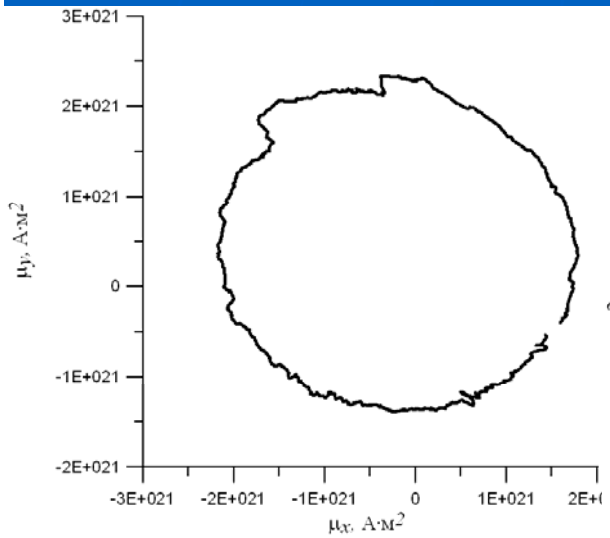
Parameters of distribution of charged particles in Earth magnetosphere (Slyapin V.A.)



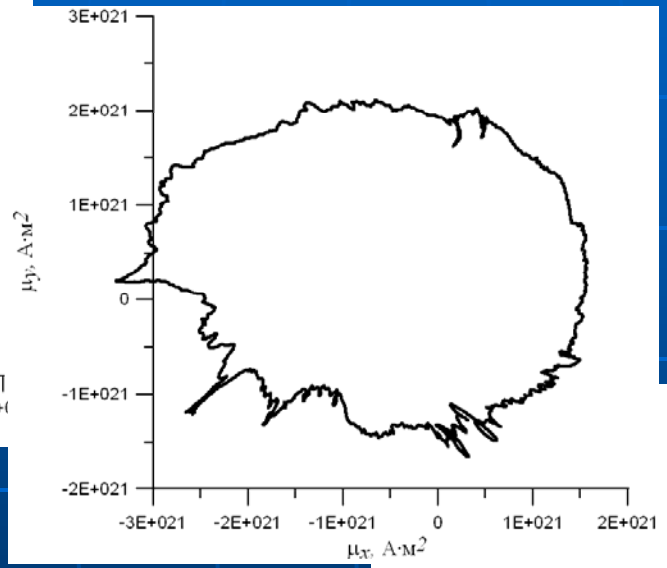
Screen form of program

Structures of Earth magnetic field

(Kornilov D.A., Mardasova Yu.A.)



19 April 2005,
GOES-10



21 April 2005,
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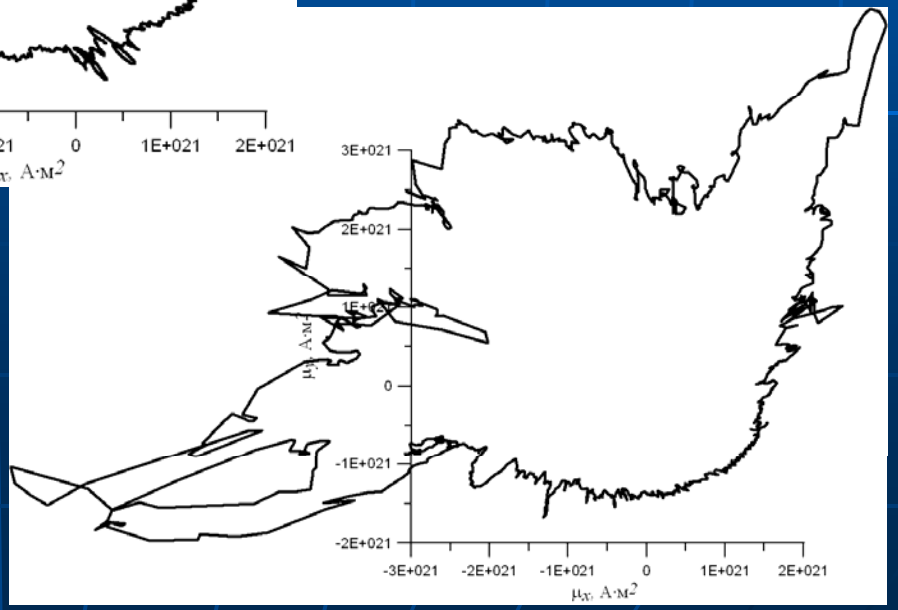
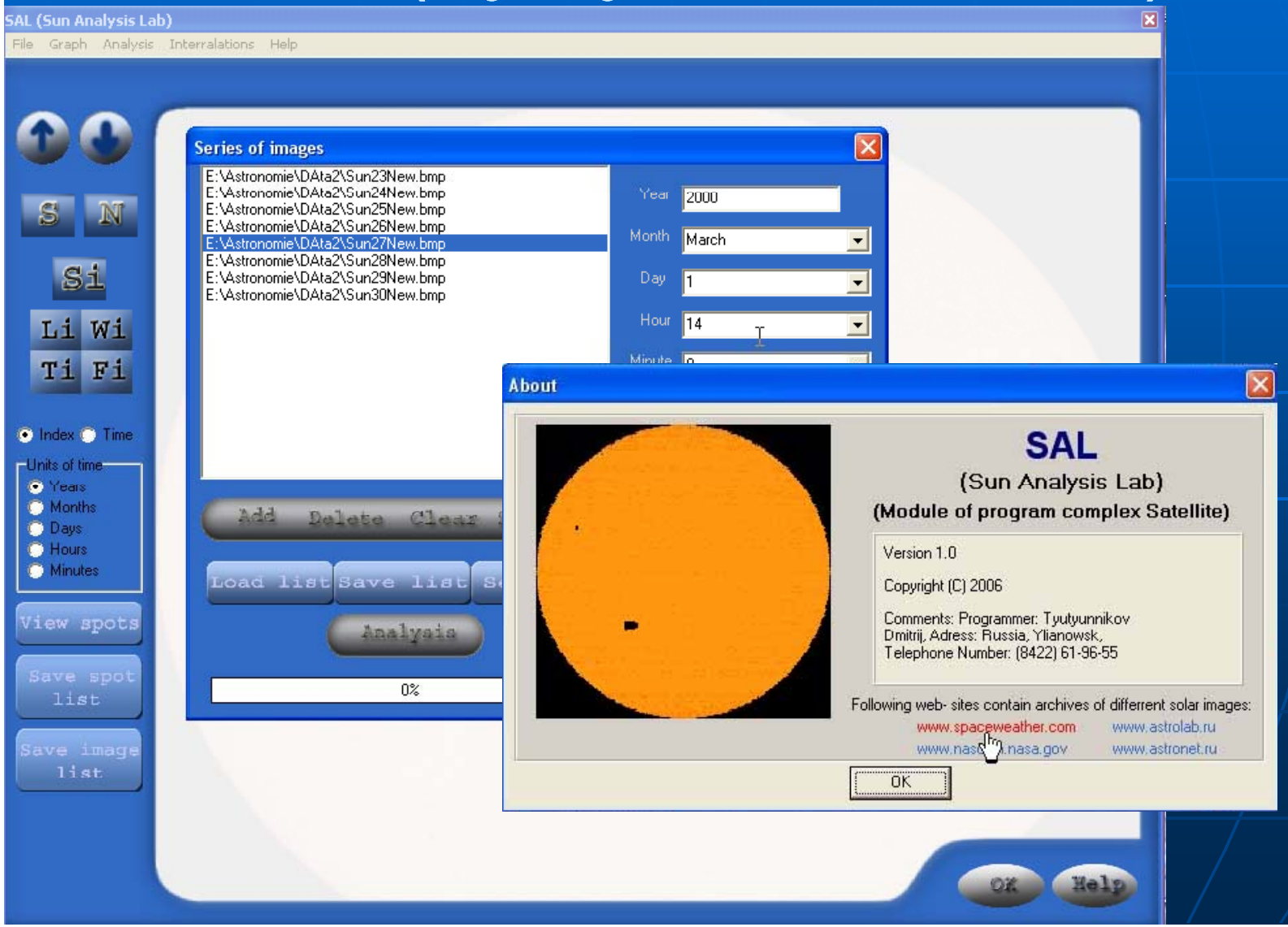
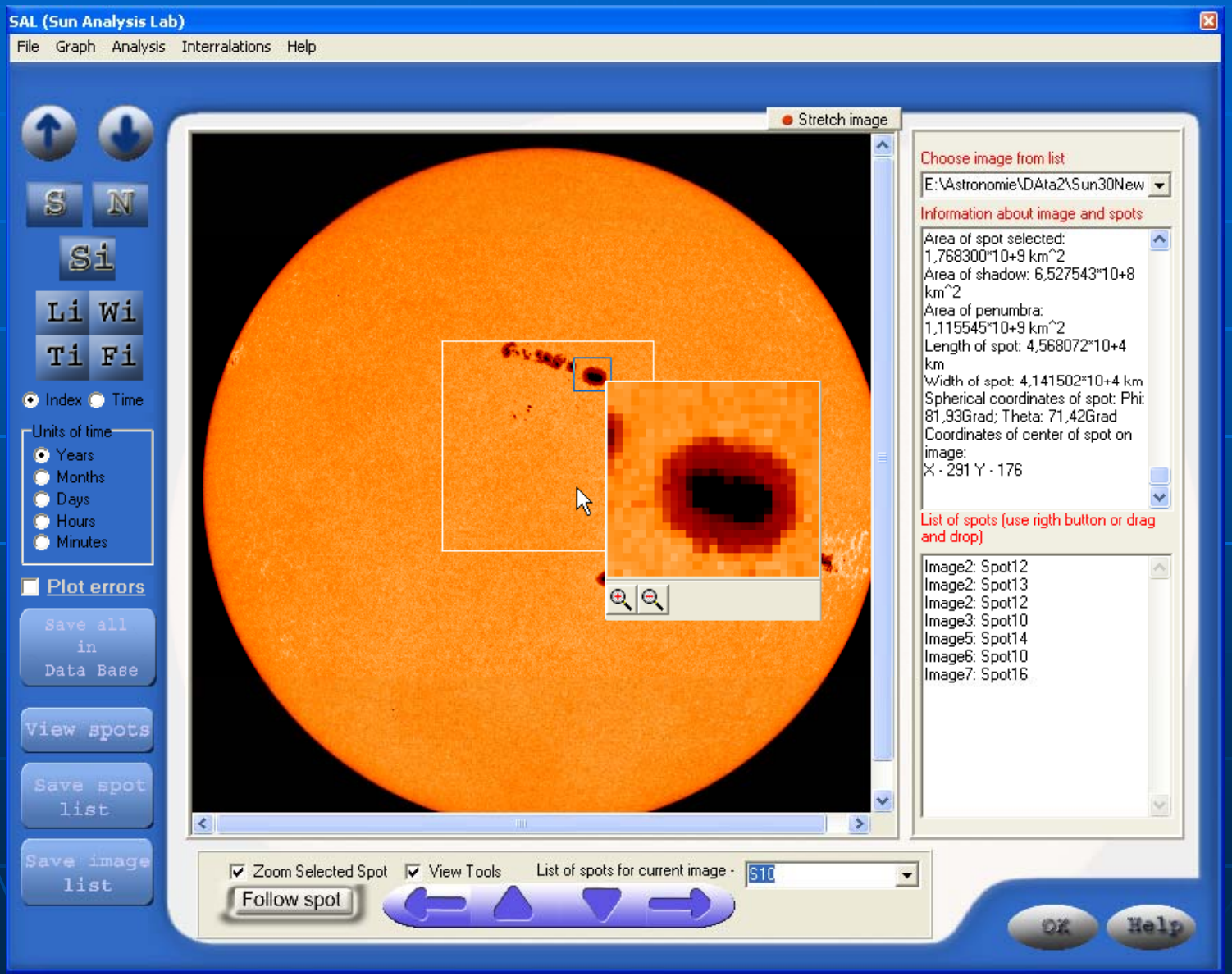


22 April 2005,
GOES-10

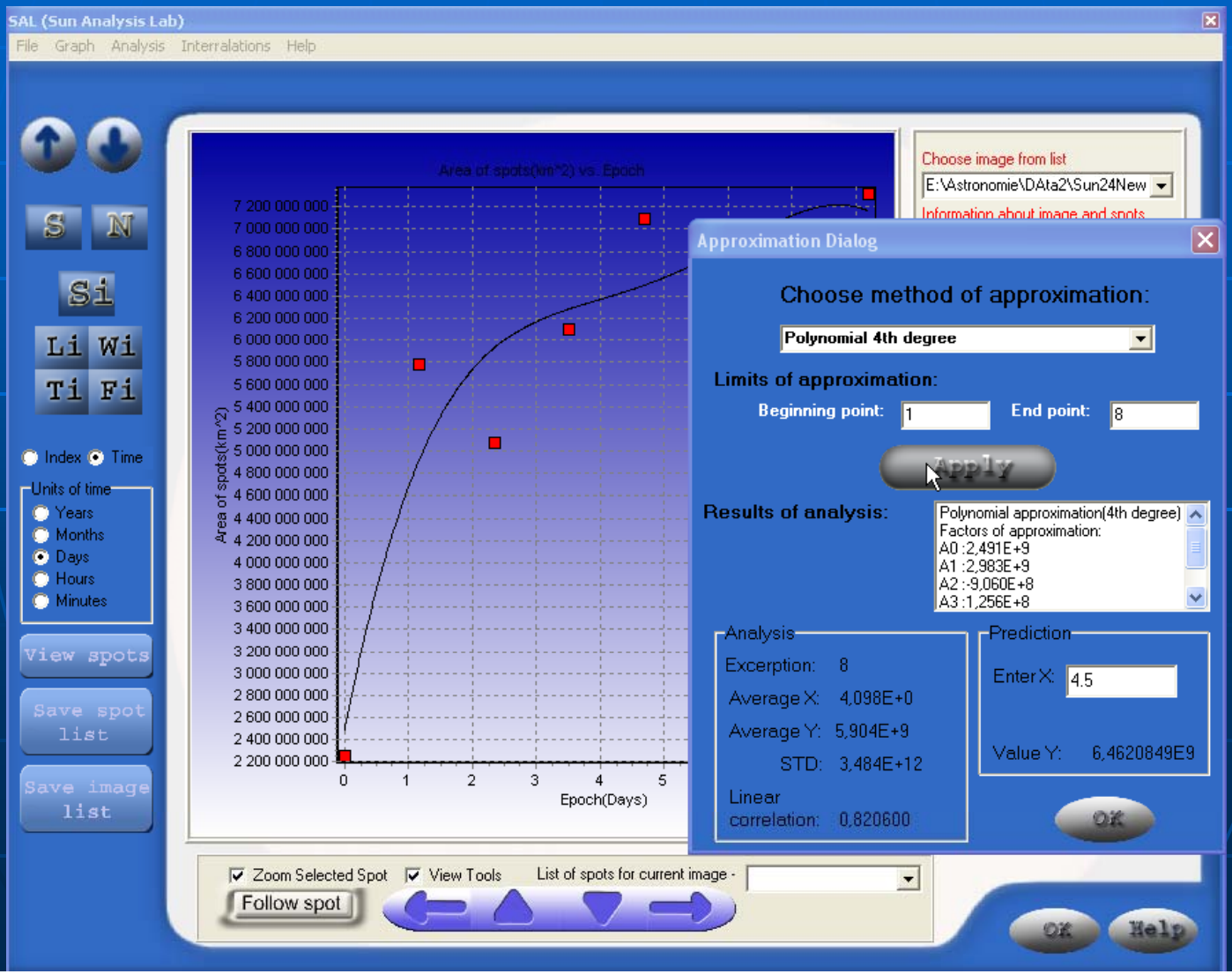
Sun spots dynamic (Tyutyunnikov D.G.)



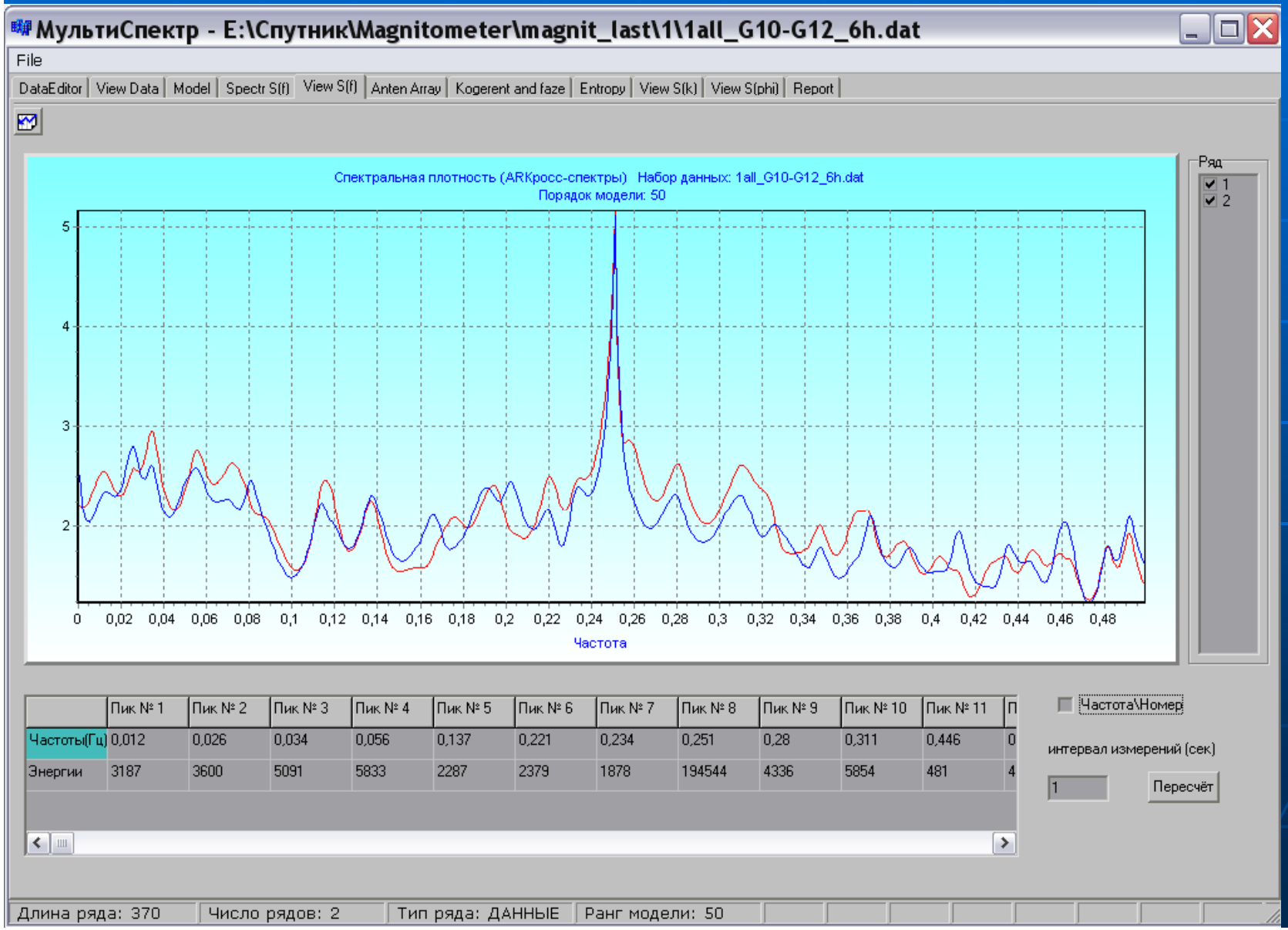
Sun spots dynamic (Tyutyunnikov D.G.)



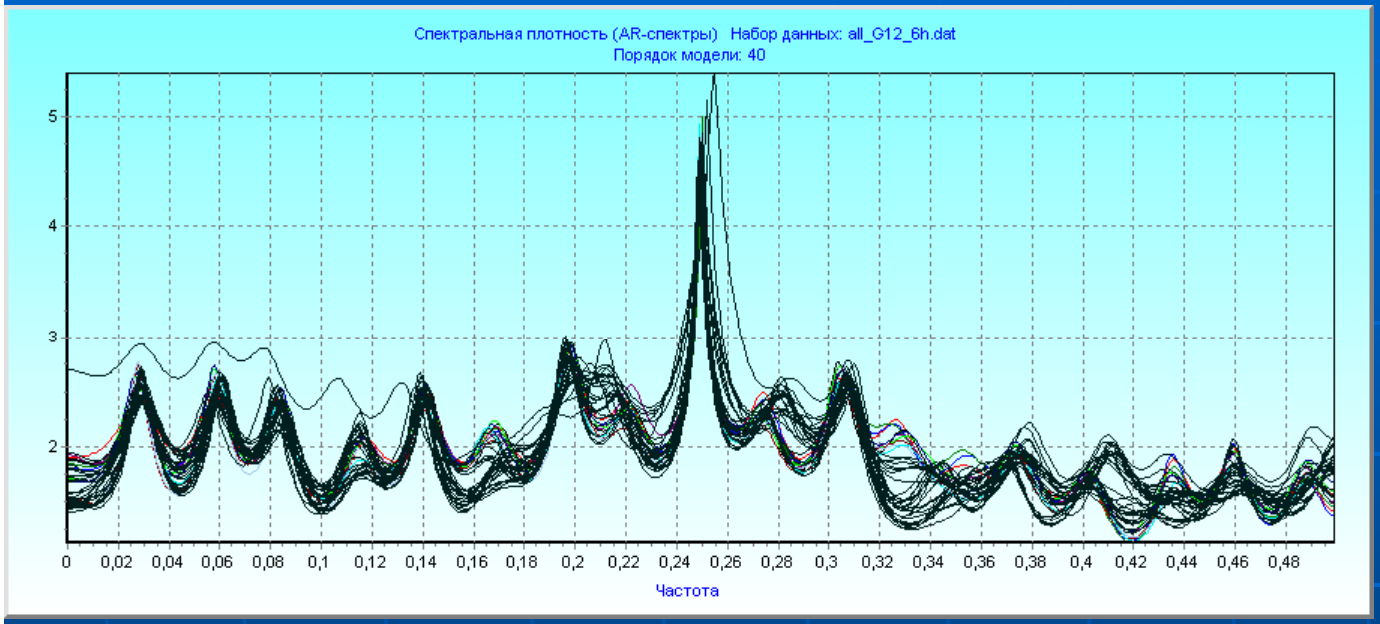
Sun spots dynamic (Tyutyunnikov D.G.)



Spectral analysis



Spectral analysis



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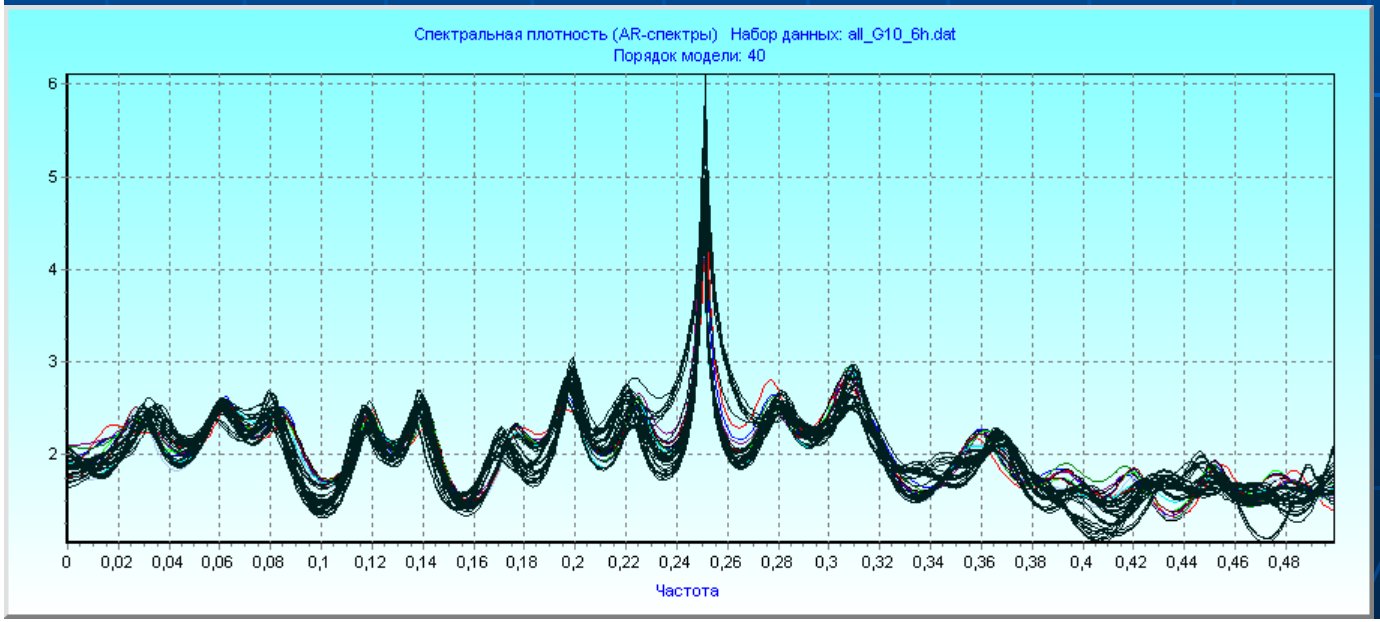

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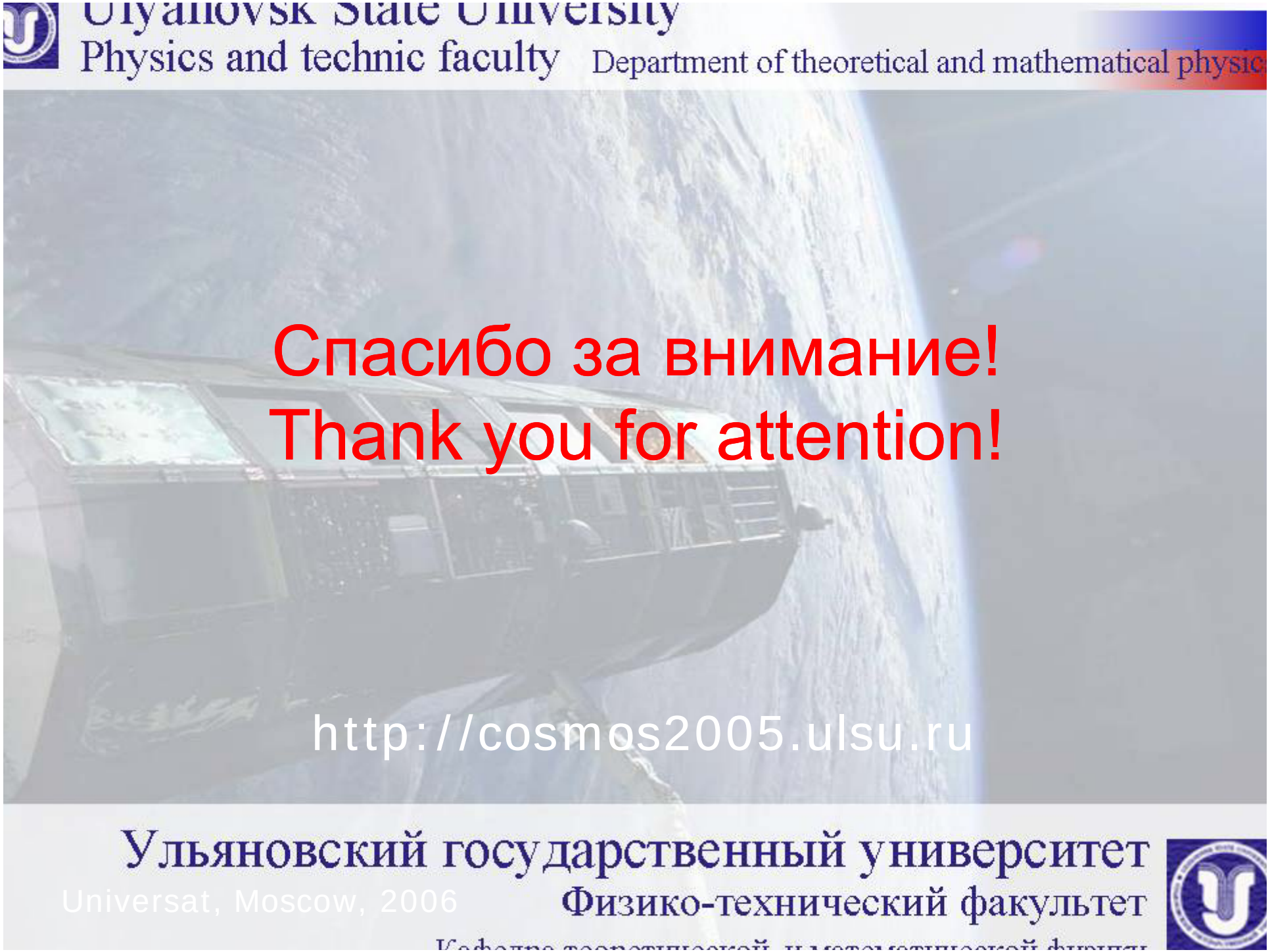
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Спасибо за внимание!
Thank you for attention!
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