

**ALL-RUSSIAN CONFERENCE**  
**“Asteroid-comet Hazard – 2005”**  
October 3-7, 2005, St. Petersburg, Russia



**Second announcement**

Institute of Applied Astronomy of the Russian Academy of Sciences invites you to participate in the all-Russian scientific conference “Asteroid-comet Hazard-2005” which will be held 3-7 October 2005 in St. Petersburg.

**Purposes**

The purposes of the conference are to provide a common forum for experts of diverse background and disciplines to come and exchange information and ideas, to recommend subsequent development of research, to attract public attention to severe hazard to the Earth from asteroids and comets approaching it and necessity of state support of the research directed to safeguard the Earth against this hazard.

**Topics to be discussed:**

- 1) Study of small bodies of the Solar system (asteroids, comets, meteoroids);
- 2) Asteroid-comet hazard (origin and dynamic evolution of objects approaching the Earth (NEO's), observations, physical properties, cataloguing, estimation of collision probability with the Earth and other bodies);
- 3) Collisions of cosmic bodies with the Earth (modelling of collisions and their consequences, studying the traces of past catastrophes, the hazard for civilization, prediction of collisions and dealing with mass-media);
- 4) Counteraction (discovering hazardous cosmic objects, methods and means of acting upon NEO's, organization of counteracting the A-C hazard).

**Program committee:**

Batrakov Yu.V.	Institute of Applied Astronomy of RAS, St.Petersburg
Zaitsev A.V.	Planetary Defense Center, Moscow
Zaitsev A.L.	Institute of Radio-engineering and Electronics of RAS, Moscow, Fryasino
Zheleznov N.B (Vice-chairman)	Institute of Applied Astronomy of RAS
Lupishko D.F.	Research Institute of Astronomy of Kharkiv National University, Ukraine
Medvedev Yu.D.	A.F. Mozhajsky Military Engineering and Space Academy, St. Petersburg
Nemchimnov I.V.	Institute for Geospheres Dynamics of RAS, Moscow
Rykhlova L.V.	Institute of Astronomy of RAS, Moscow
Simonenko V.A.	Russian Federal Nuclear Center – Zababakhin Institute of Technical

Finkelstein A.M.	Physics, Snezhinsk
Fortov V.E.	Institute of Applied Astronomy of RAS, St.Petersburg
Kholshevnikov K.V	Institute for High Energy Densities of RAS, Moscow
Shor V.A.(Chairman)	St.Petersburg State University
Yatskiv Ya.S.	Institute of Applied Astronomy of RAS, St.Petersburg
	Main Astronomical Observatory of Ukrainian National Academy of Sciences, Kiev

### **Local organizing committee:**

Zheleznov N.B.	– Chairman
Zamarashkina M.D.	– Secretary
Kastel G.R.	
Krat O.I.	
Shor V.A.	– Vice-chairman
Yagudina E.I.	

### **Format of the conference**

Participation of foreign scientists in the conference is welcome.

Languages of the conference are Russian and English.

Contributed paper can be submitted for oral presentation or as posters. Depending upon the number of papers offered, it is hoped to provide of 40 minutes for invited papers and 15 minutes for contributed ones, including discussion. Up to 0.6 square meters will be provided for poster (9 pages of A4 format). For oral presentation participants can use multimedia projector and/or overhead. Special sessions are provided in schedule of the conference for demonstration of posters. Abstract of no more than 4 pages and no less than 1.75 page must be submitted for each presentation of any form (see instructions for preparing abstracts in [Supplement 1](#)). Submitted papers are reviewed by the Program committee and selected on the basis of their suitability for inclusion in the program. The committee reserves the right to reject paper or to change form of presentation. Papers will not be accepted for reading “in absentia”.

To be included in collection the abstracts must be submitted by May 15, 2005 in electronic form. In exceptional cases texts can be submitted in printed form or by FAX. Simultaneously with electronic form of abstract the printed copy signed by principal author must be sent to the IAA by airmail.

The scientific sessions of the Conference will take place in the building of the IAA RAS (nab. Kutuzova, 10; metro station “Chernyshevskaya” is at 20 minutes walk from IAA, also trolleybus No. 3 and No. 8 stop is at 5 minutes walk).

### **Registration fee**

The registration fee is 900 Roubles (approximately 32 USD or 25 EURO) for participants and 450 Roubles for accompanied persons. It should be paid in cash on-site during registration.

Registration fee does not include travel expenses, accommodation and other expenses of the participant.

## Accommodation

Participants of the conference will be accommodated in the hotels of St. Petersburg.

We recommend you to visit sites: <http://www.saint-petersburg-hotels.com/>, <http://www.hotelruss.spb.ru/> and <http://www.hotelpiter.ru/>. There you will find detailed information about hotels and room rates in them. Additional information is given in [Supplement 2](#). You have opportunity to reserve the most appropriate hotel that would meet your requirements through www. But if you find difficulty in reserving hotel or are in need of our advice, please do not hesitate to apply to us and we render you necessary help.

## Cultural program

The conference will be hosted by the Institute of Applied Astronomy. Building of the Institute is situated at Neva embankment close to historical centre of St. Petersburg.

St. Petersburg is one of the most beautiful cities of the world, which celebrated recently three-hundredth anniversary. Numerous architectural ensembles of the city and its suburbs, bridges and embankments of Neva river and canals form inimitable in its beauty appearance of the city. World-wide known museums, first of all, Hermitage and Russian museum, possess unique collections of works of art and world masterpieces.

There are dozens theatres in St. Petersburg, including Mariinsky theatre of opera and ballet.

Participants of the conference will have opportunity to make free one-day bus excursion to radio-observatory “Svetloe” (Karelian isthmus).

## Registration form

(for preliminary registration, send it before 15.05.2005 )

### Registration form

First name

Family name

Scientific degree, title

Name of Institute (in full)

Abbreviation of the Institute name

Your position in the Institute

Post address (in full)

Phone

FAX

E-mail

Title of your paper <sup>1)</sup>

Oral or poster <sup>1)</sup>

Are you speaker (demonstrator)? <sup>2)</sup> (Yes/ No)

### Notes:

<sup>1)</sup> In case of representation of several papers/posters, please number them and use these numbers when answering next two questions. If you do not present paper/poster, answer “No” in line “Title of your paper”, and skip next two lines.

<sup>2)</sup> Inscribe “Yes”, if you are speaker or demonstrator of poster, in other case inscribe “No”.

Papers and abstracts should be sent to: [ahazard@quasar.ipa.nw.ru](mailto:ahazard@quasar.ipa.nw.ru) or to post address: Russia, 191187 St. Petersburg, nab. Kutuzova, 10, Institute of Applied Astronomy. AH-2005.

### **Important dates:**

1 December 2004	First announcement
1 January 2005	Pre-registration form
1 March 2005	Second announcement
15 May 2005	Submission of abstracts, preliminary registration
1 August 2005	Third announcement
3-7 October 2005	Time of the conference

In case you suppose that someone of your colleagues can be interested in participation in the conference do not hesitate to acquaint him/her with this announcement.

Hopefully we can welcome all of you here in St. Petersburg.

With best wishes

*Local Organizing Committee.*

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**Fax:** +7-(812)-275-11-19

**E-mail:** [ahazard@quasar.ipa.nw.ru](mailto:ahazard@quasar.ipa.nw.ru)

**Web-page:** [www.ipa.nw.ru](http://www.ipa.nw.ru)

## Instruction to preparing abstracts

Abstract of a paper includes following parts:

- Name;
- Author(s) (name or initials are given before family name);
- Institution, city, country. In case authors work in different Institutions, reference to the number of corresponding line with name of Institution is given after each authors;
- Main part of the text which can have different sections;
- List of references (if needed). References in text are given to the numbers in brackets and entries in the list are numbered in correspondence with these references. Every entry in the list should give full list of authors (initials are printed after family names) (for collections – editors), full title of book, collection or paper. For books or collections it is necessary to indicate city, publishing house and year of publication; for papers published in journals – title, year, volume and number of journal. The first and the last page of paper should be indicated wherever it was published.

Abstracts should be prepared using Microsoft Word 1997, 2000, XP in correspondence with following rules:

- Volume of abstracts no less than 1.75 pages and no more than 4 pages; last page should be filled in no less than  $\frac{3}{4}$ ;
- Paper sheets of A4 format;
- Margins 45 mm (left and right), 66 mm above and below;
- Type - Times New Roman, 10 pt (for the exceptions indicated below; title, list of authors, names of sections in text and “List of references” are printed in bold.
- Black and white figures, only;
- Title of paper, list of authors, formulae, tables and pictures are centered;
- Tables and pictures are numbered and should have headings (explanations) (tables on top, pictures – below).

### Formats

**Format of headline:** No new line, centerline, ordinary interval, offsets left, right, from the heading – 0 pt, after heading – 12 pt, after authors – 6 pt, after the line with Institution – 12 pt. Type of title – 12 pt, bold; list of authors – 11 pt, bold; name of Institute, city, country – 9 pt, usual; Capital letters are used in the beginning of sentence, abbreviations, in proper names etc.

**Format of paragraph of main text:** break off in new line – 0.7 cm, centered in width, ordinary interval between lines, break off left, right, before and after – 0; type – 10 pt usual. Interval before name of section – 6 pt, after – 3 pt, no break off; type of section name – 11 pt, bold, no break off.

**Format of list of references:** type – 10 pt, usual; titles of books, collections, journals – italic; initials are printed after family name.

## Model for abstract

Model of abstract is given in accompanied file **abstract\_eng.doc** and this file can be used as an abstract pattern.

## Supplement 2

### Additional information about hotels in Saint Petersburg.

In the vicinity of the IAA building there are four hotels: “Neva”<sup>\*\*\*</sup>, two or three stars hotel (7 minutes walk), “Russ”<sup>\*\*\*</sup> (< 20 min walk), “Arbat-Nord”<sup>\*\*\*\*</sup> (< 20 min. walk) and “Saint-Petersburg hotel”<sup>\*\*\*</sup> (<20 min. walk). It is necessary to use city transport to reach the IAA from other hotels. The most quick and reliable transport in St. Petersburg is metro (underground). The nearest station of metro is “Chernyshevskaya”, 20 minutes walk from the IAA. Such hotels as “Russ” and “Arbat-Nord” are 8 minutes walk from metro station, “Neva” and “Saint Petersburg hotel” – less than 15 min. walk. On the other hand such hotels as five stars hotels “Astoria”, “Corintia”, “Europe”, “Redisson”, four stars hotels “Angleter”, “Helvetia” are situated in historical center or close to Nevsky prospect.

A number of three stars hotels as “Moscow hotel”, “Oktiabrskaya” are situated quite near metro station and in center of the city. Such hotels as “Sovetskaya”<sup>\*\*\*</sup>, “Russia”<sup>\*\*\*</sup>, “Pribaltiyskaya”<sup>\*\*\*\*</sup>, “Pulkovskaya”<sup>\*\*\*\*</sup>, “Okhtinskaya”<sup>\*\*\*</sup> are rather far from center of the city and from the IAA .To reach historical center of the city or the IAA from them, not renting taxi, can take half an hour or so.

Room rates in Russ hotel (see <http://www.hotelruss.spb.ru/>) are shown in Rubles, whereas in other hotels – in USDollars or in EUROS. Current exchange rate of Central Bank of the Russian Federation is 1 USD = 27.7 Rubles (approximately), 1 EURO = 36.6 Rubles (approximately). You will pay for room in Rubles. When indicating rates most of hotels are used exchange rate determined by Central Bank of Russia, but some of them can use its own exchange rate not in your favor. Reservation of rooms in some hotels is free, whereas in some other it can cost up to 25% of the first day rate.

Please do not hesitate to apply to us with your questions.

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## Asteroid close approaches: analysis and potential impact detection

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### Introduction

The last ten years have seen tremendous progress in our ability to assess the risk that an asteroid or comet might collide with the Earth. The catalyst for much of the increased interest in these Near-Earth Objects (NEOs) was a request by the U.S. Congress in 1990 that NASA undertake two workshop studies, one to study ways of increasing the discovery rate of these objects, and another to study the technologies and options for deflecting or destroying an NEO if it should be found to pose a danger to life on Earth. The report from the first of these workshops proposed an international NEO survey program called Spaceguard, borrowing the name from a similar project in Arthur C. Clark's science fiction novel *Rendezvous with Rama* [1].

### List of references

1. Morrison D. (ed.). *The Spaceguard Survey Report of the NASA International Near-Earth-Object Detection Workshop*. Pasadena, Jet Propulsion Laboratory. 1992.
2. Bowell E., Muinonen K. Earth-crossing asteroids and comets: groundbased search strategies. In: *Hazards due to comets and asteroids*, p. 149–197 (Gehrels T., ed.), Univ. Arizona Press, Tucson. 1994.
3. Milani A, Chesley S.R., Valsecchi G.B. Asteroid close encounters with the Earth: risk assessment. *Planetary Space Sciences*. V. 48, p. 945–954.