Asteroid-Comet Hazard Problem: Activities in Russia

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Organizational activity

1. The Expert Working Group on the Asteroid/Comet Impact Hazard Problem was formed in Feb 2007 at the RAS Space Council. The group includes representatives from RAS, Universities, Roscosmos, EMERCOM, Rosatom as well as from other organizations interested in the problem.

http://www.inasan.ru/eng/asteroid_hazard/

The main task of the Group is to work out the Federal Scientific and Technical Program (FSTP) "Asteroid/Comet Impact Safety of Russia".

Research centers of the RAS as well as those of universities are doing studies on some aspects of the problem. However they have not enough funds to create an efficient system of detection, monitoring and characterization of NEOs (especially if it requires space born facilities). Moreover the expensive technologies of deviation and destroying of hazardous NEO and/or mitigation are far out of responsibilities of research centers doing fundamental science.

That is why the FSTP could be realized only at the national level!

The are six projects proposed for the FSTP:

1. ***Cooperation***
2. ***Monitoring***
3. ***Characterization***
4. ***Space missions***
5. ***Preventing***
6. ***Apophis***

1. Cooperation

Goals of the project: Organization of interaction (in informational environment) of on the problem at the level of ministries and organizations in Russia and at the international level.

Comments: **We support colleagues from USA and other countries who emphasize role of UN in elaboration of making decision mechanism accepted by international community.**

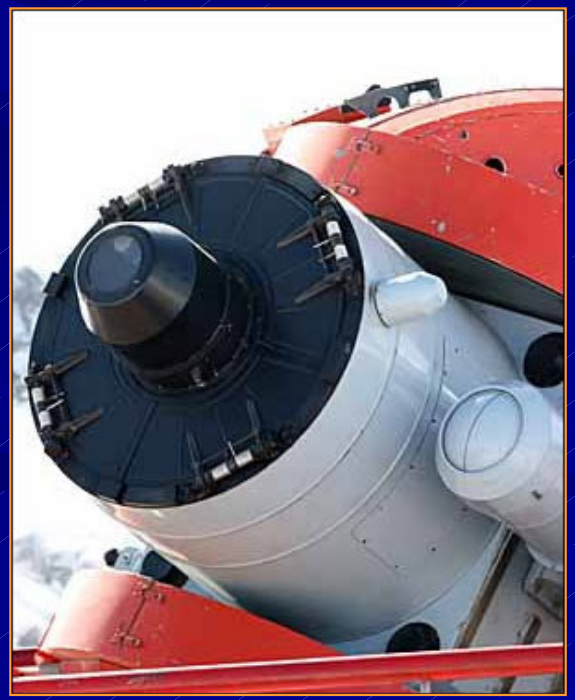
2. Monitoring

Goals of the project: Organization of coordinated system for detection and cataloging NEO at national level and it's integration into world system.

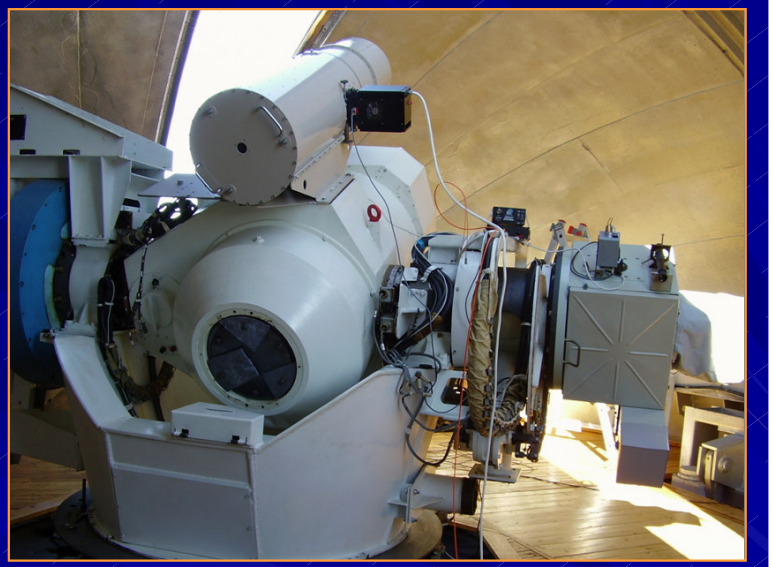
Comments: It is desirable to get observational data for all minor bodies larger than 50 - 100 m. This is somewhat unrealistic at the moment. In Russia there exist no dedicated instruments. Special system for monitoring near Earth space (like "Okno") are not designed for NEOs. Construction of the telescope of PanSTARRS type is under consideration .

Observational facilities

“Okno”



Typical instrument



D=350 mm

FOV = 5°

4K*4K KODAK

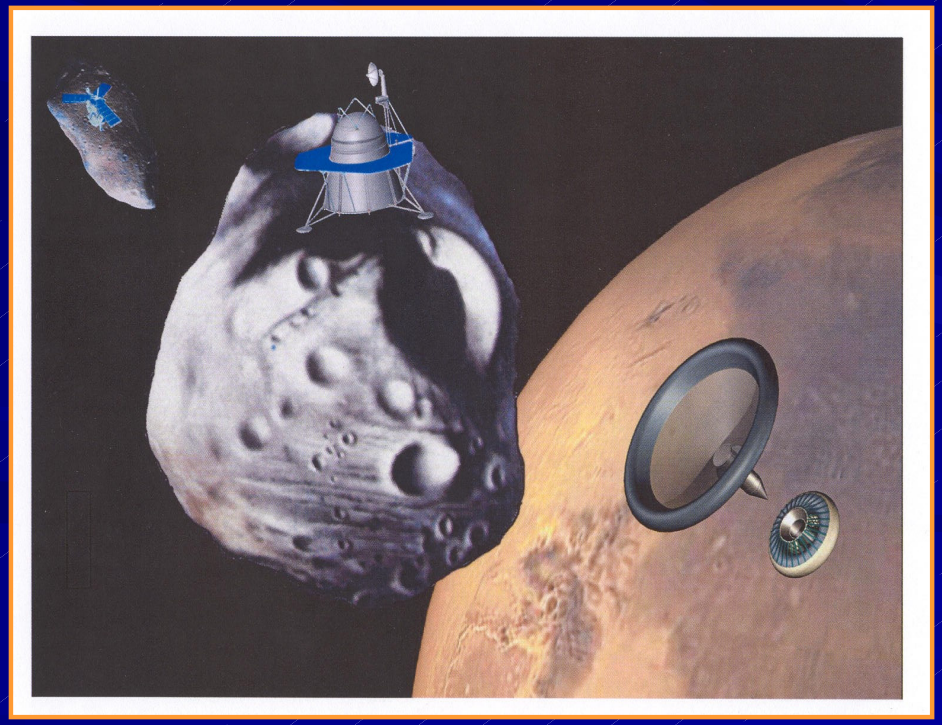
DYNACON II

3. Characterization

Goals of the project: Coordination and support of activities in improving accuracy of orbital parameters of hazardous objects and impact probability. Construction of permanently updated data base of orbital, physical and chemical properties of hazardous objects and data base of impact structures on the ground and see bottom and cooperation with international resources.

4. Space missions

Goals of the project: Developing of projects of space mission designed for studying hazardous objects in situ.



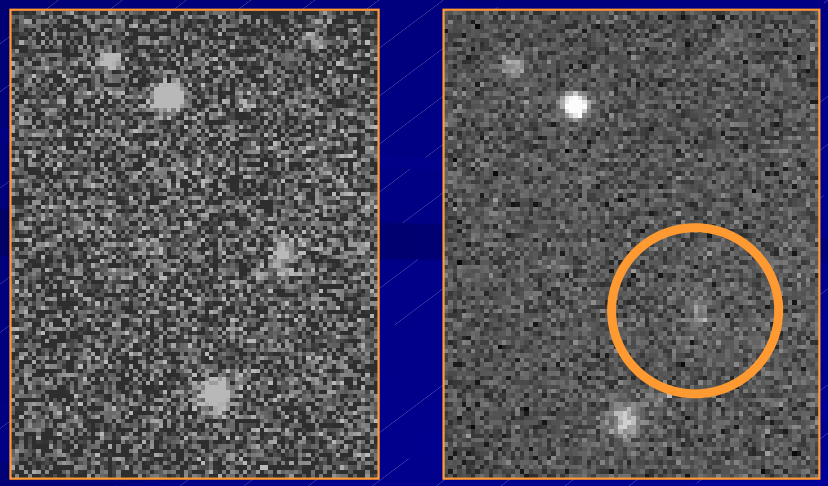
5. Preventing

Goals of the project: Development of coordinated system of R&D activity in Russia on the systems of preventing impact and mitigation.

6. Apophis

Goals of the project: Organization of complex study of potentially hazardous object 2004 MN4 = (99942) Apophis, that has considerable probability to hit Earth in 2036 and later.

Comments: **Apophis can provide the first opportunity for mankind to unite efforts in preventing the threat from space.**



2004mn4
11.05.2005
(Terskol
Observatory)

This year (June 30, 2008) we will have a centenary of the Tunguska catastrophe. I invite experts to attend the largest international Conference devoted to this event –

"100 years since Tunguska phenomenon: past, present and future" (http://tunguska.sai.msu.ru/) .

The conference will be held in June 26 – 29 in Moscow.

International Conference

100 years since Tunguska phenomenon: Past, present and future

Русский

- **International Conference "100 years since Tunguska phenomenon: Past, present and future"**
- Homepage
- Important dates
- First Announcement
- Second Announcement
- Program of the Conference
- Journey and Accomodation
- Make application
- List of members
- Approved Presentations
- Publications
- Links
- Contacts

June 26-28, 2008. Moscow, Leninsky Prospekt, 32a **Russian**

Date: June 26-28, 2008.

Moscow, Leninsky Prospekt, 32a

The Conference is organized by

- Russian Academy of Sciences - Institute for Dynamics of Geospheres
- Lomonosov Moscow State University - Sternberg Astronomical Institute, Institute of Mechanics
- Meteorite Committee of Russian Academy of Sciences

Purposes

The Conference is devoted to the 100-year anniversary of the Tunguska phenomenon. The purpose of the conference is to integrate the efforts of inter-disciplinary experts in understanding the Tunguska event and similar impact phenomena.

Problems for discussion

100 years since the Tunguska event

1. Mathematical modeling of trajectory, dynamics and explosion of Tunguska cosmic object
2. Search of material of Tunguska object
2.1. Analysis of particles in soil, tree trunks and resin
2.2. Separation of cosmic dust input and aerosol sources from the background
3. Effects of global scale
3.1. Light nights
3.2. Ionosphere perturbations
3.3. Search of anomalies in Arctic and Antarctic
4. Regional and local effects
4.1. Analysis of eyewitness reports
4.2. Study of tree fall and state of forest after the Tunguska event
4.3. Investigation of magnetic properties and thermoluminescense of soil and rocks at the site
5. Ecological consequences of the Tunguska event. Genetic aspect of the problem
6. Historical, ethnographic and sociological issues connected with the Tunguska catastrophe

Exploration of asteroids and comets

1. Significance of exploration of asteroids and comets for understanding of evolution of the Solar System and exoplanetary systems
2. Problems of origin and evolution of comets and asteroids
3. Studies of minor bodies of the Solar System (asteroids, comets, meteoroids) by means of spacecrafts

Hazards due to comets and asteroids

1. The role of the Tunguska event in the problem of asteroidal and cometary hazards
2. Investigation of impact craters on the Earth and other bodies of the Solar System
3. Means of mitigation of asteroidal and cometary hazards

http://tunguska.sai.msu.ru/

Russia as the most geographically extended country (therefore having the highest probability to suffer from asteroid and comet impact) as well as the country that tries to stay at its positions in the world will not remain aloof from international attempts to solve the Asteroid and Comet Impact Hazard Problem.

Russia is ready for development and extension of different forms of international cooperation on the problem!

Thank you for your attention!