Bolja Civilizacija. Mreza Znalaca i FER

Davor Pavuna

Svicarski Institut za Tehnologiju

ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

Physis = Moja Znanost

Izazovi Tehnologije

Hrvatski Izazovi

Technology's Promise

Highlights from the TechCast Project

By William E. Halal

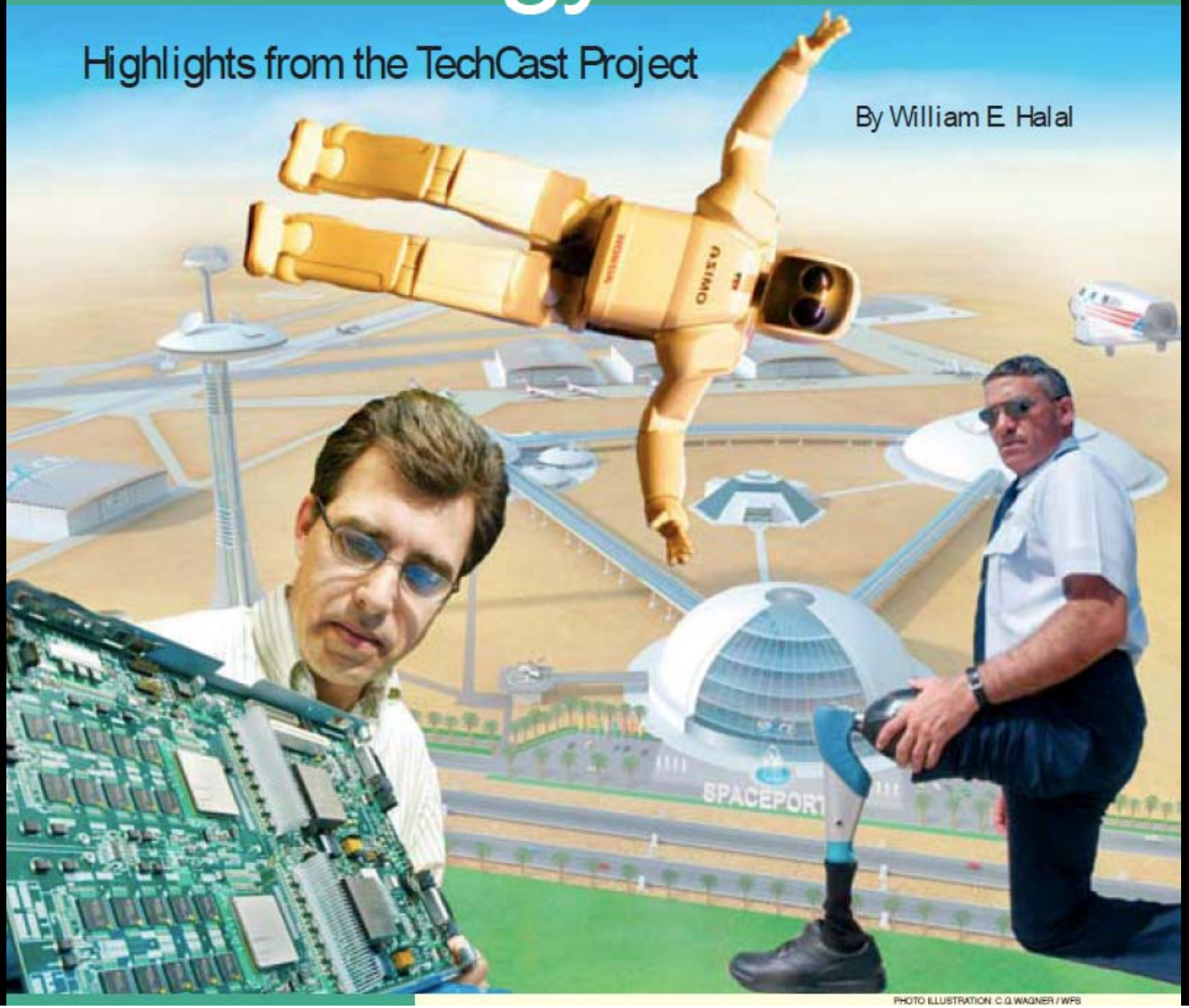
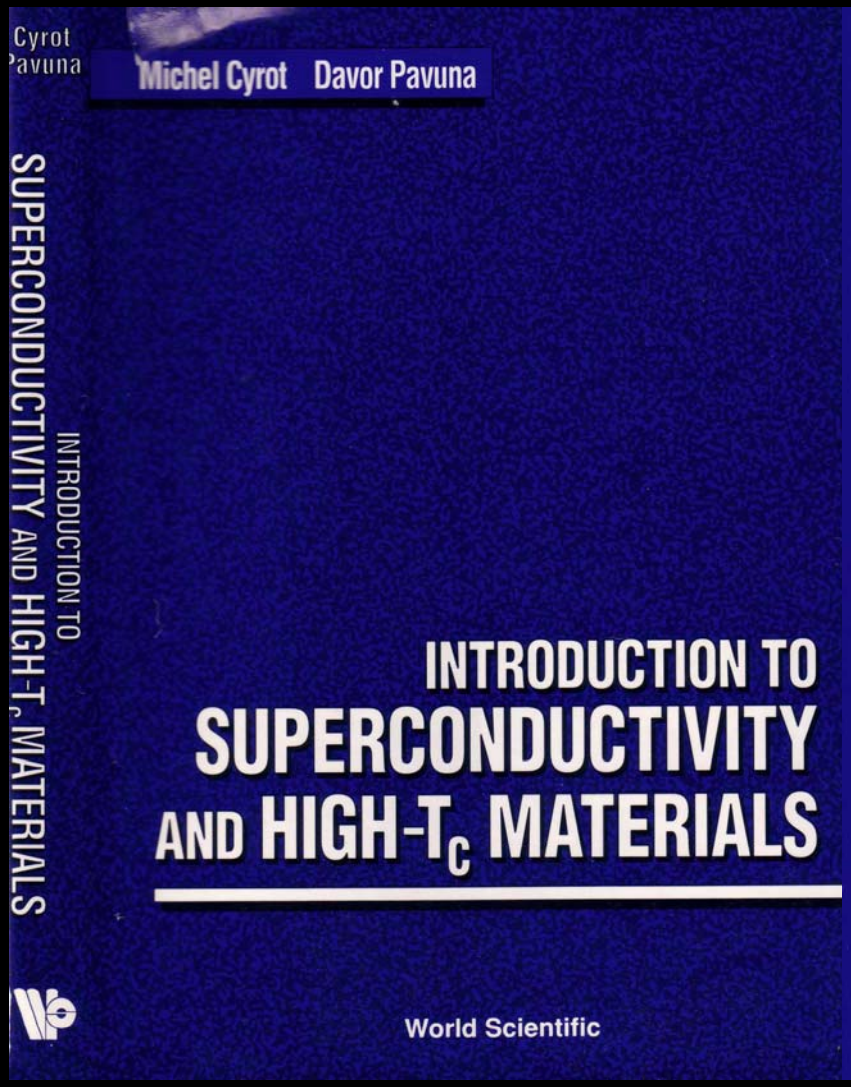


PHOTO ILLUSTRATION: C.Q.WAGNER / WFS

Introductory Superconductivity Textbook (1992):



About the Book

"... an introductory text, with a unified, balanced point of view, is of considerable value. This is what Cyrot and Pavuna have produced. Their book still requires a significant effort for a genuine beginner, but it can be studied step by step. It sets up delicate compromises between the opposite dangers of dogmatism and oversimplification."

from the foreword by ***P G de Gennes***

What sets this book apart from others on the introduction to superconductivity and high-T_c materials is its simple and pragmatic approach. The authors describe all relevant superconducting phenomena and rely on the macroscopic Ginzburg-Landau theory to derive the most important results. Examples are chosen from selected conventional superconductors like Nb-Ti and compared to those of high-T_c materials. The text should be of interest to students and researchers in all branches of science and engineering, with the possible exception of theoretical physicists, who may require a more mathematical approach.

The Yamanashi MLX01 MagLev train.

Uses for Superconductors

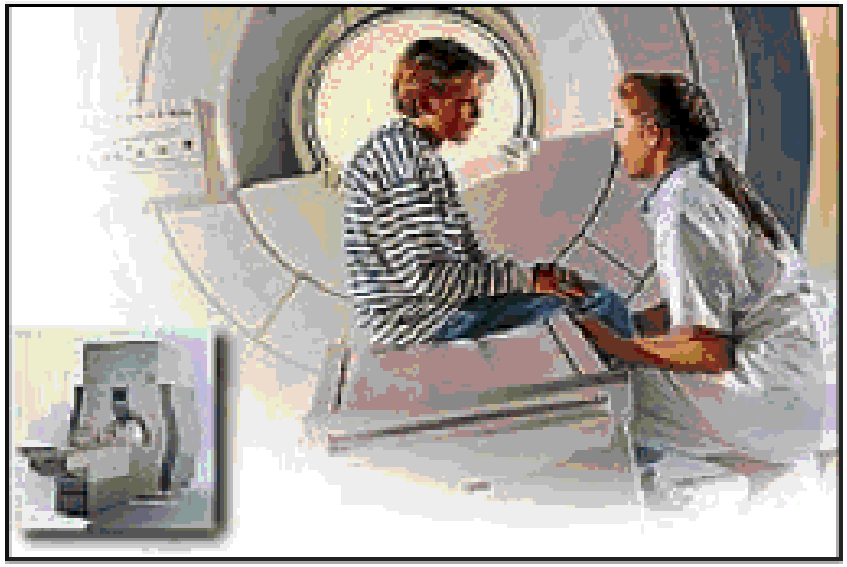
Magnetic-levitation is an application where superconductors perform extremely well. Transport vehicles such as trains can be made to "float" on strong superconducting magnets, virtually eliminating friction between the train and its tracks. Not only would conventional electromagnets waste much of the electrical energy as heat, they would have to be physically much larger than superconducting magnets. A landmark for the commercial use of MAGLEV technology occurred in 1990 when it gained the status of a nationally-funded project in Japan. The Minister of Transport authorized construction of the Yamanashi Maglev Test Line which opened on April 3, 1997. In December 2003, the MLX01 test vehicle (shown above) attained an incredible speed of 361 mph (581 kph).

American Association of Physics Teachers

UCSB

ITP Secondary Science Teachers Conference
19 August 2000

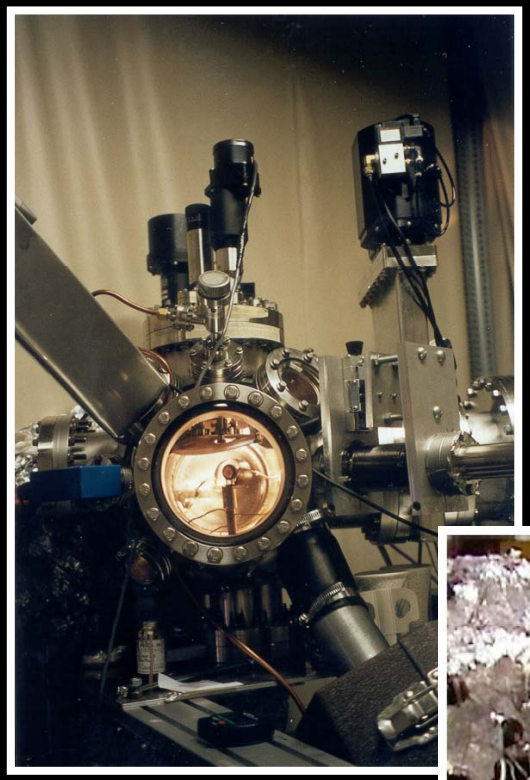
MRI & "Big Physics"

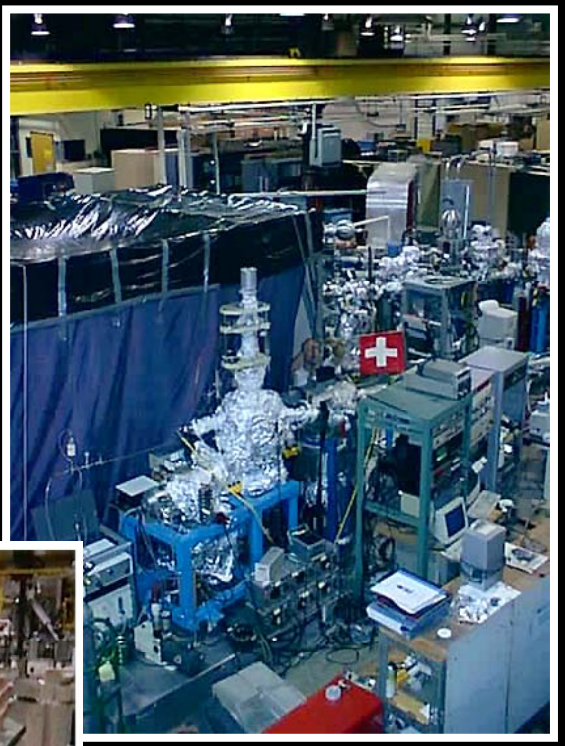


Magnetic Resonance Imaging
Philips

Tevatron
Fermi National Laboratory

In Wisconsin, USA (1995 -):





10^1

10 meters

Starting our trip upwards ....
We can see the foliage.

10^6

1,000 km

Typical sight from a satellite

10^7

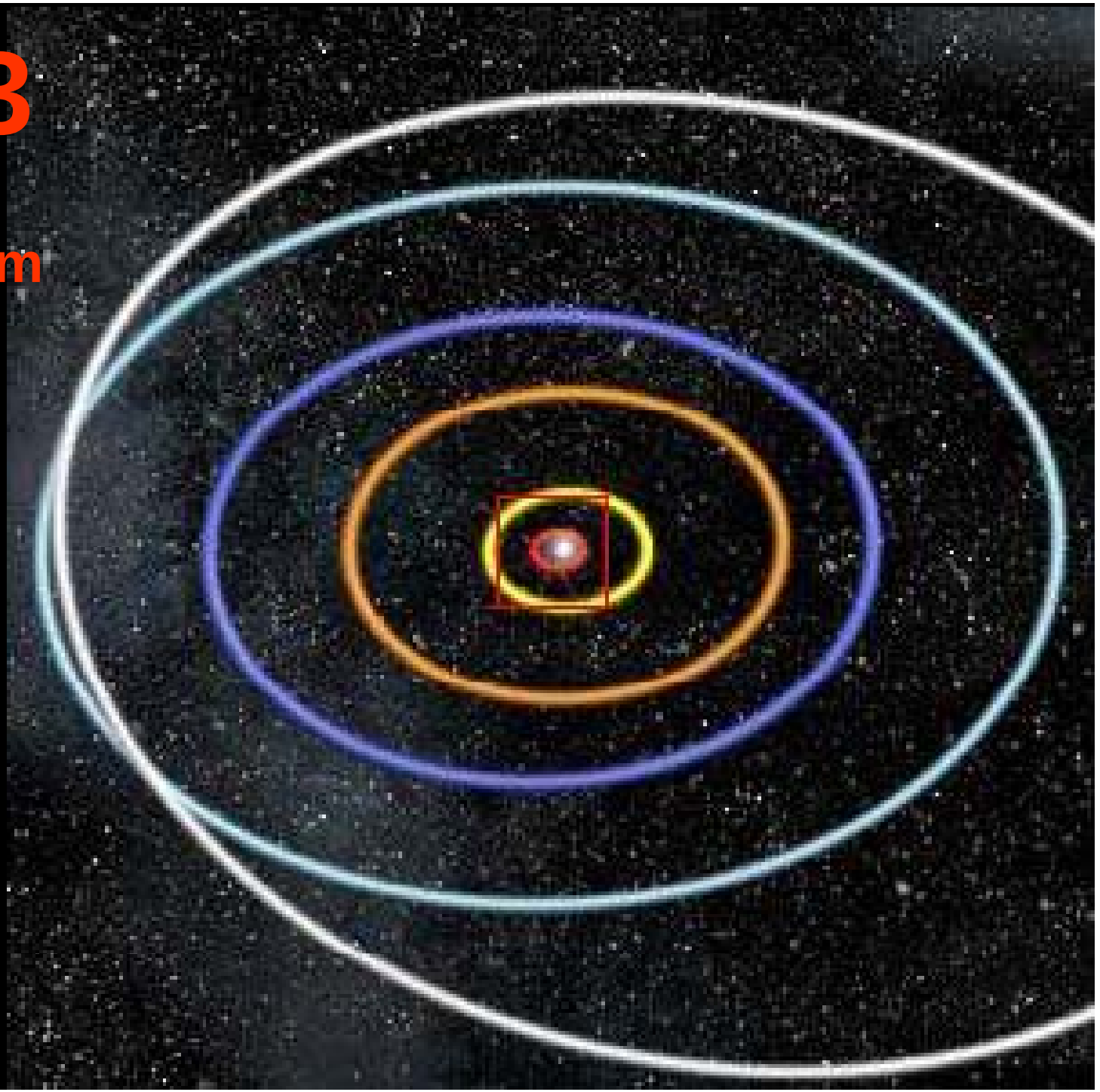
10,000 km

The northern hemisphere of Earth, and part of South America

10^{13}

10 Billion km

At this height of our trip, we could observe the Solar System and the orbits of the planets



10^{18}

100 light-years

“Nothing”
Only stars and
Nebulae...

10^{22}

1 Million light-years

At this tremendous distance we can see the entire Via-Lactea (Milky Way) & other galaxies as well ...

10^{23} - 10 Million light-years

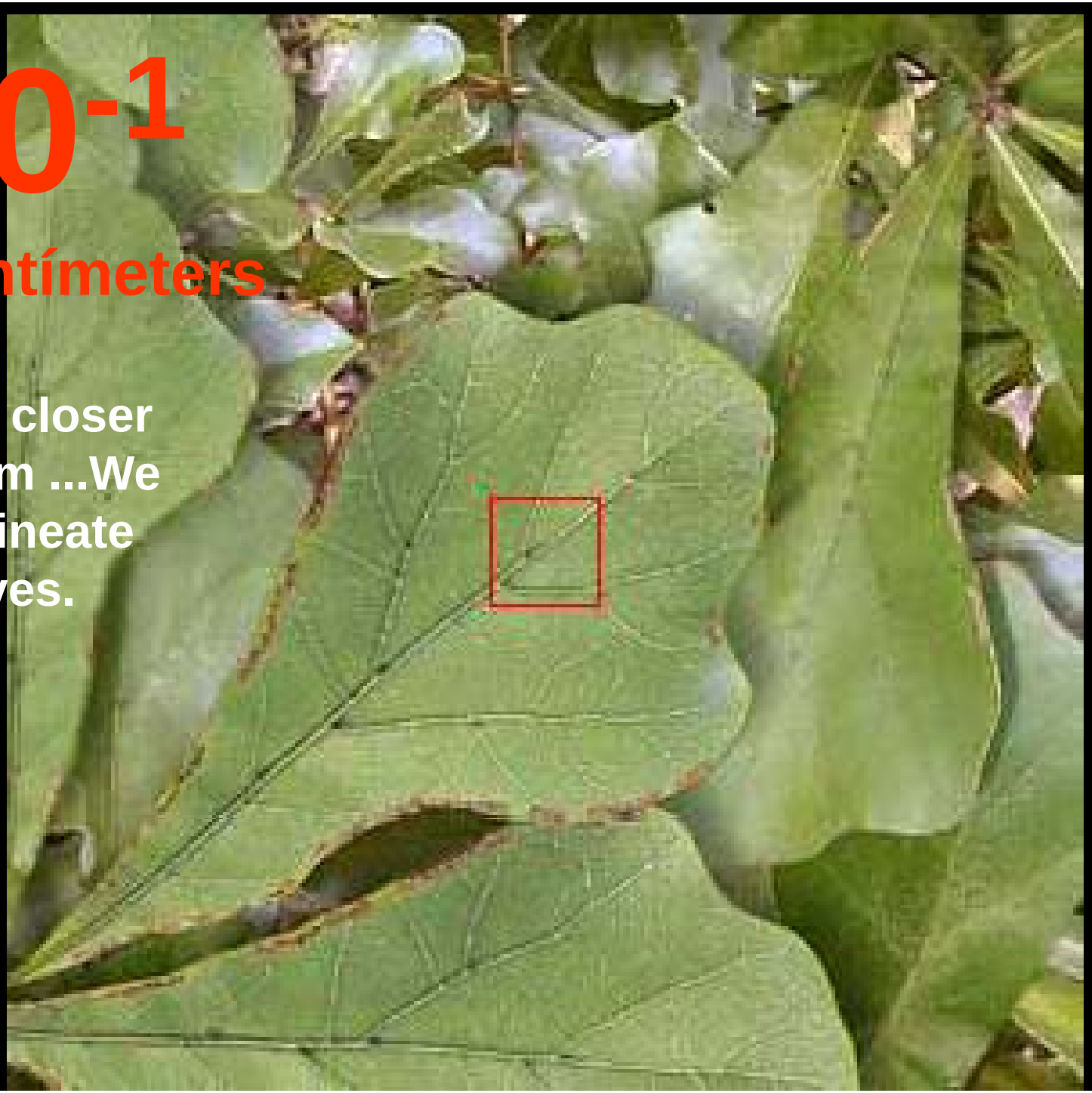
All the galaxies look small with immense empty Spaces inbetween.

The same laws are ruling all !

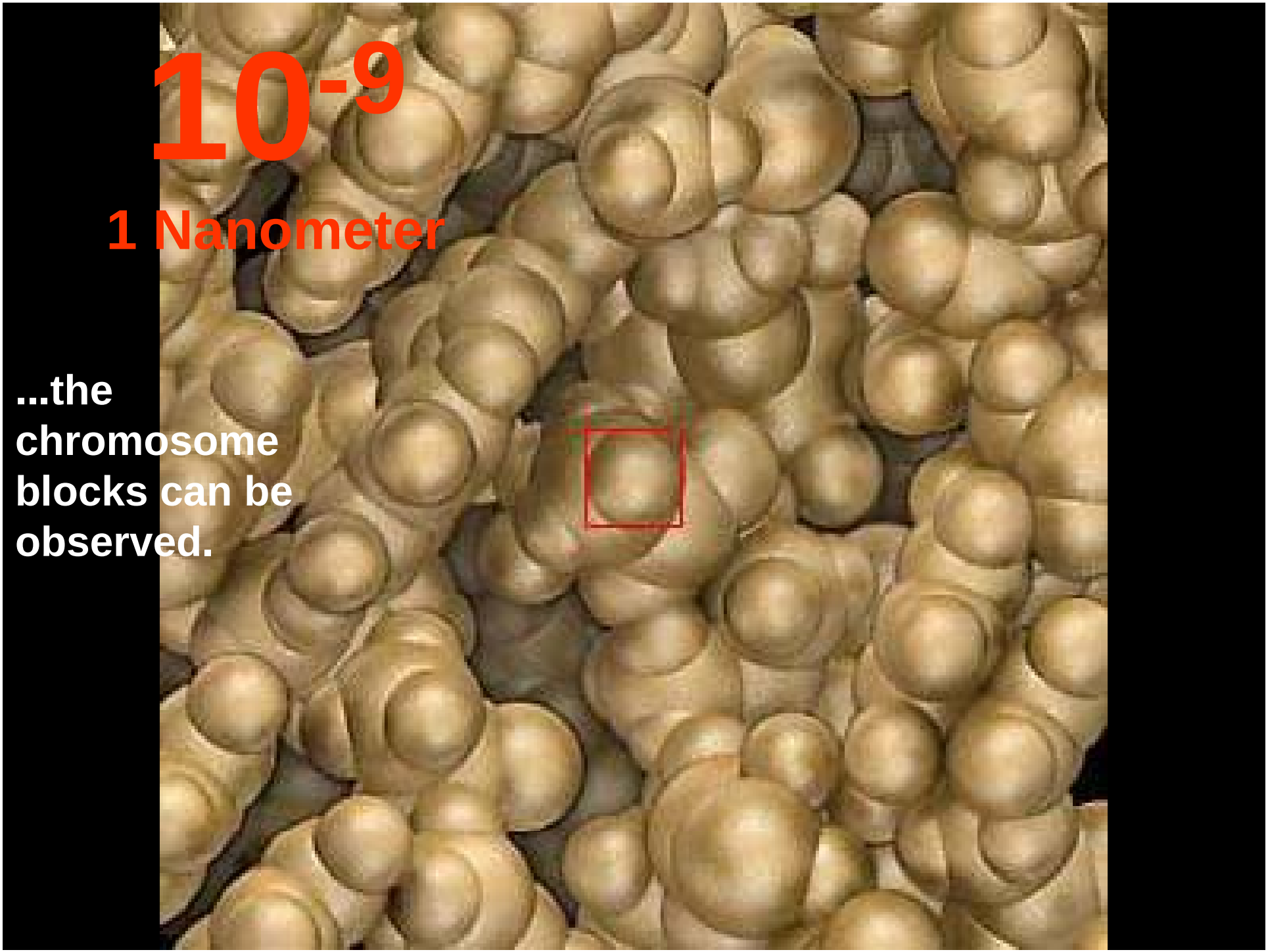
10^{-1}

10 Centímeters

Getting closer at 10 cm ...We can delineate the leaves.



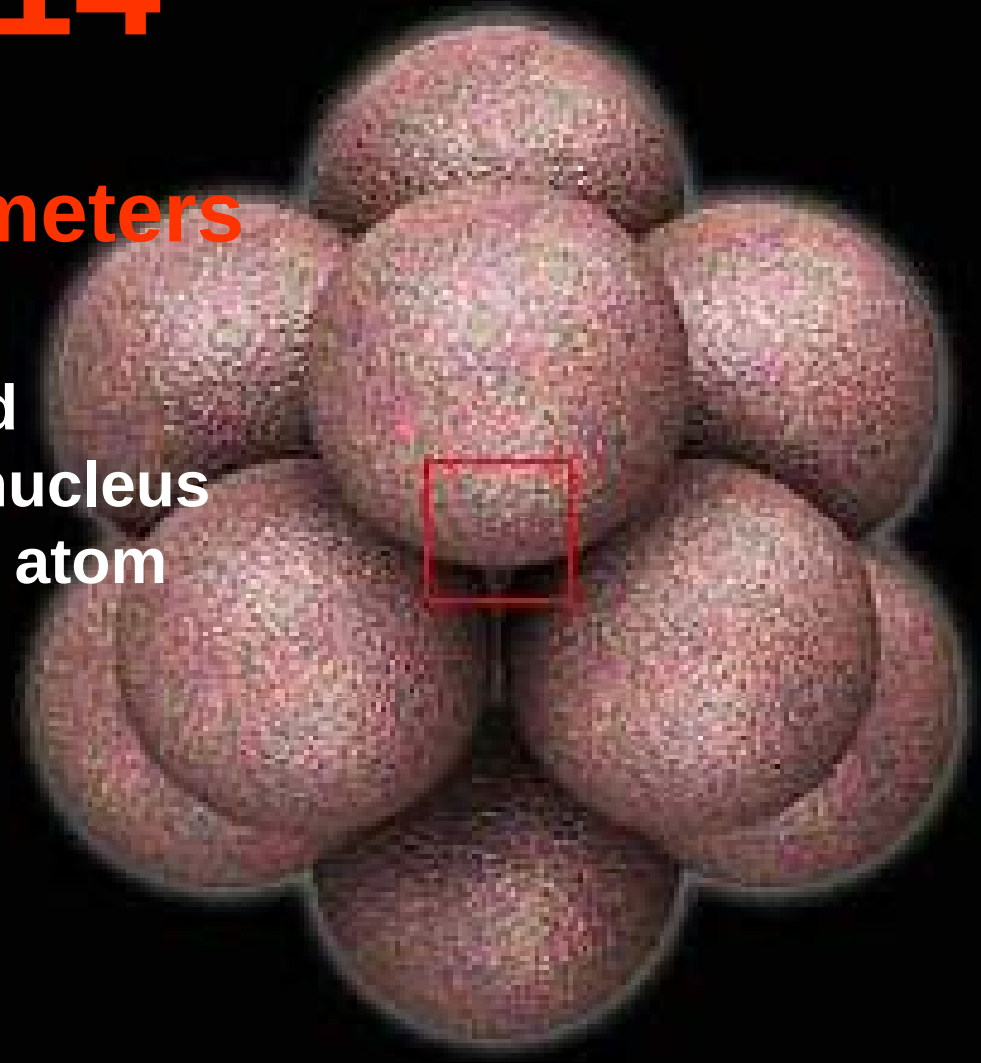

10^{-6}
1 micron
The nucleus of the cell is visible.


10^{-9}
1 Nanometer
...the chromosome blocks can be observed.

10^{-14}

10 Femtometers

Now we could observe the nucleus of the carbon atom



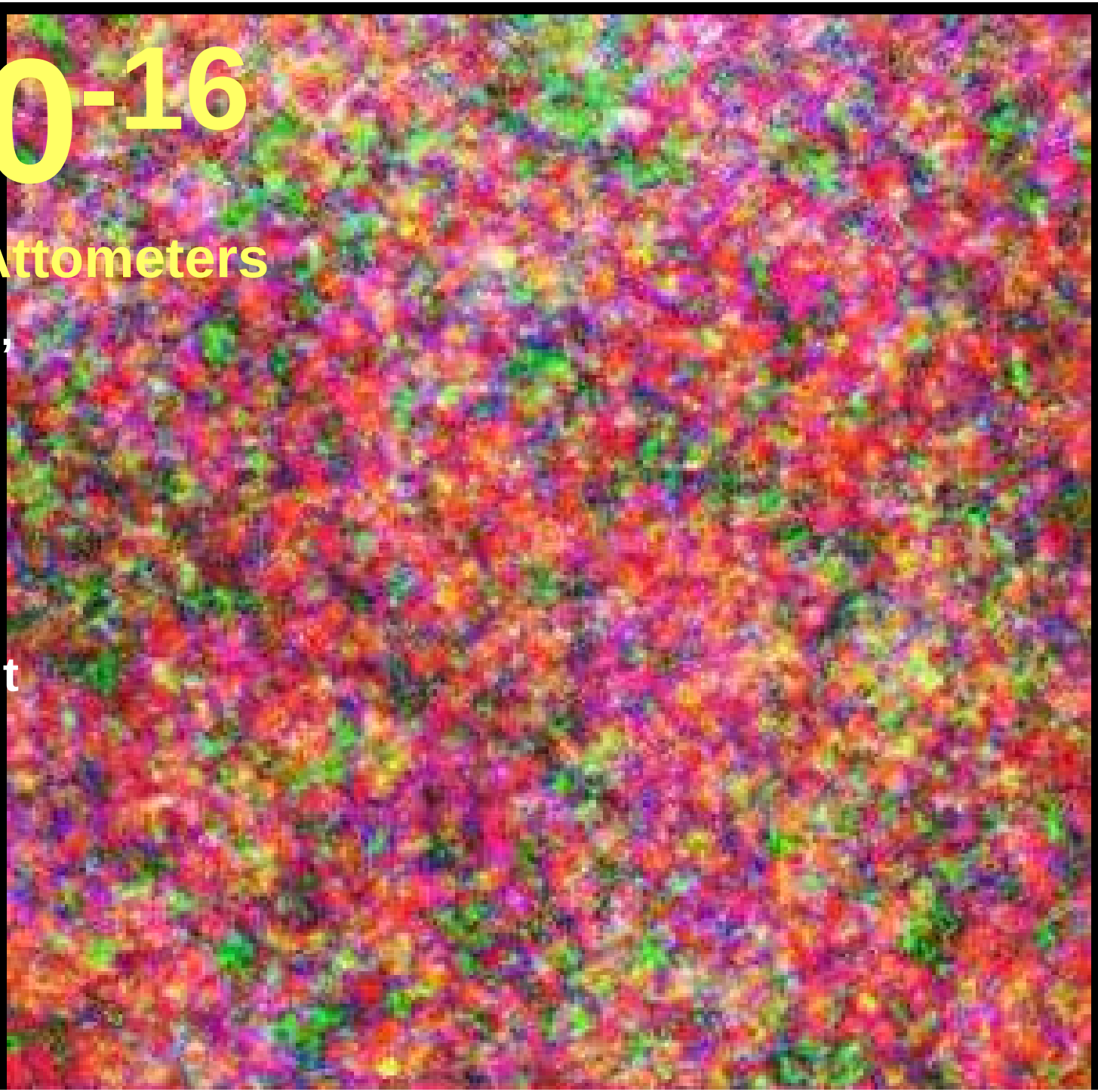
10^{-16}

100 Attometers

‘quarks’

This is

our limit



Savrsen Univerzuum :

Zakon & Energija

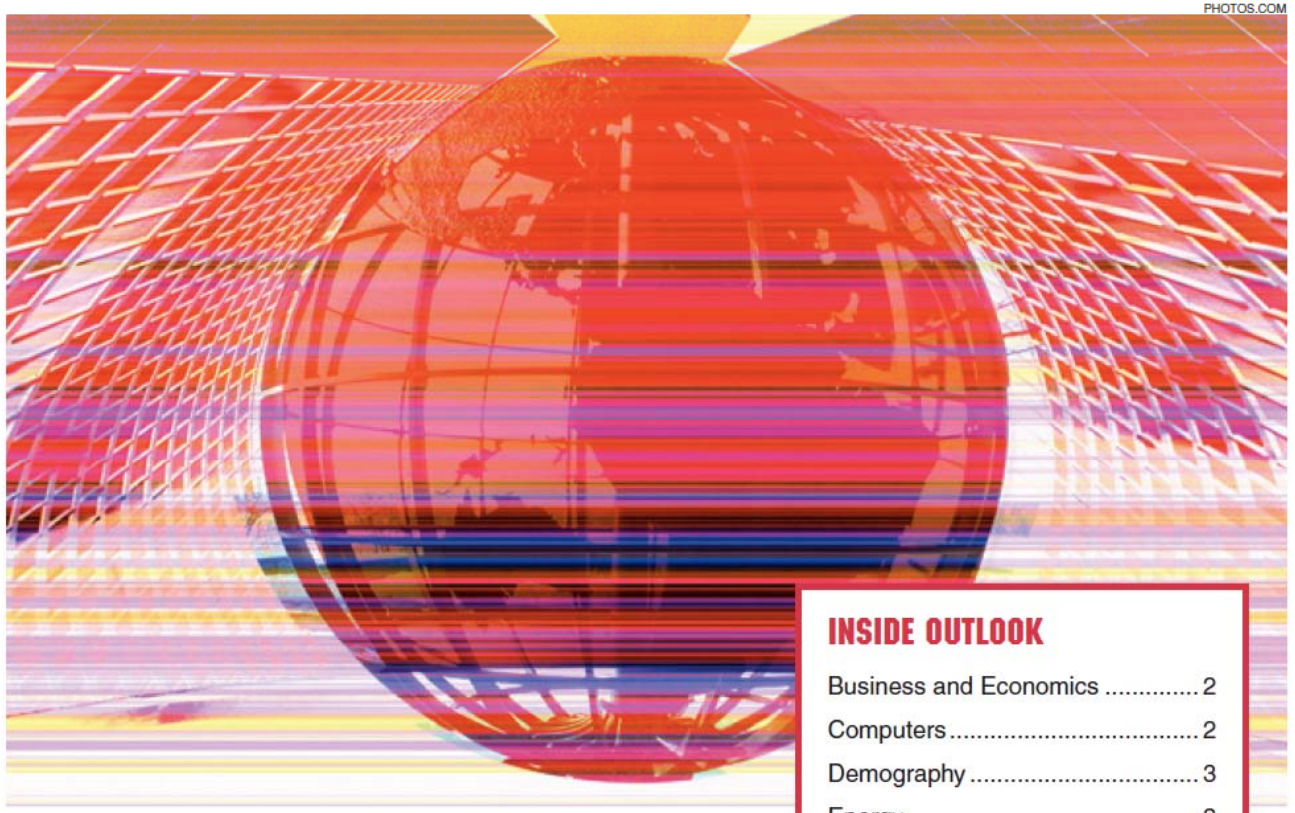
Sto Izabiremo ?

THE FUTURIST

OUTLOOK 2009

Recent Forecasts from World Future Society for 2009 and Beyond

PHOTOS.COM



INSIDE OUTLOOK

INTRODUCTION

More sex, fewer antidepressants; more religious influence in China, less religious influence in the Middle East and the United States; more

Kakvu Civilizaciju?

Beijing imposes car ban to ease traffic jams

(Xinhua)

Updated: 2008-09-28 16:37

Plastične vrećice razgrađuju se na svjetlosti: polako se raspadaju u manje, otrovnije petropolimere

CNN.com/technology, 16. prosinca 2007.

koji polako truju tlo i vodu.

CNN.com/technology, 16.prosinca 2007.

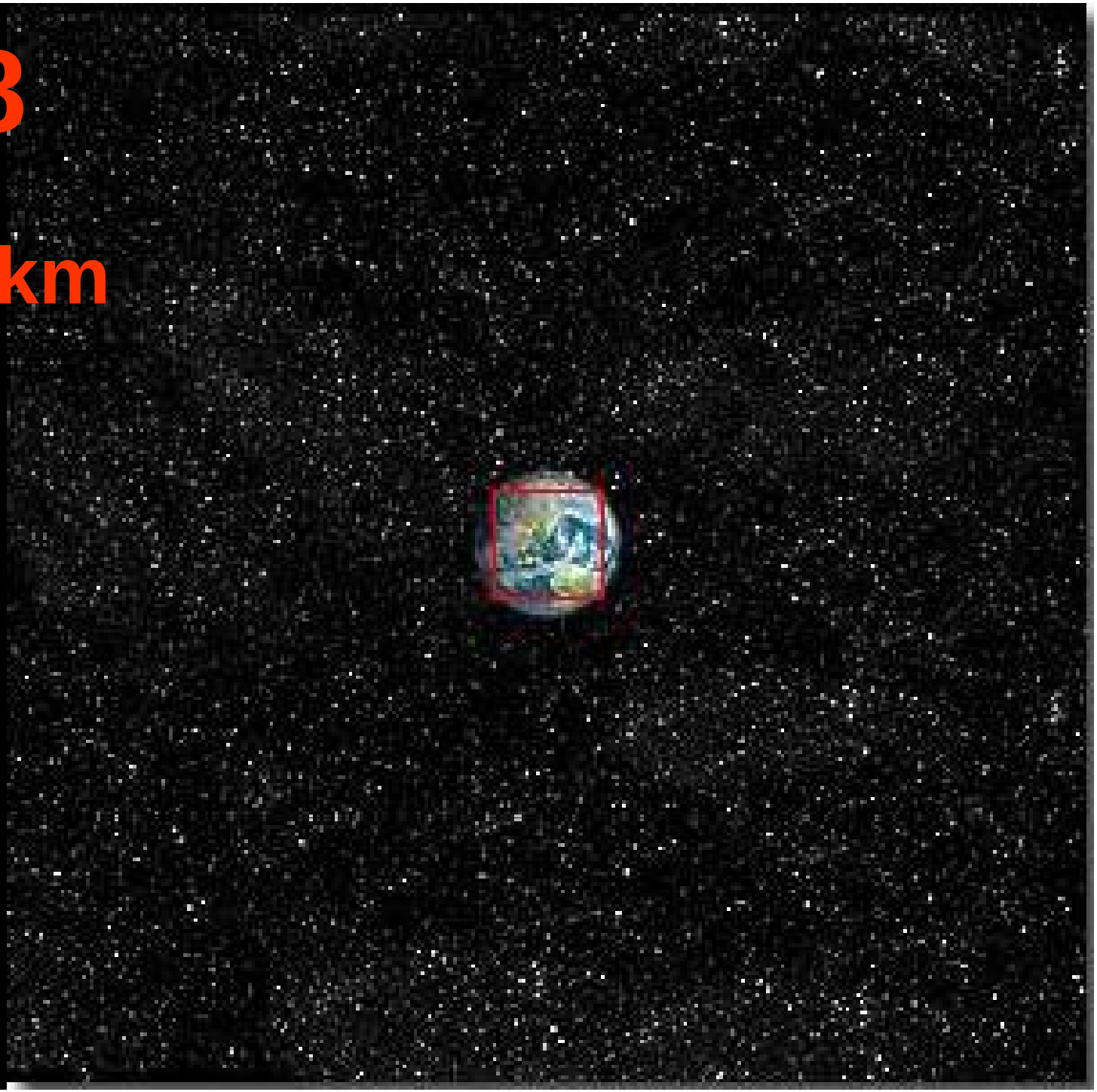
Posljedica: mikroskopske otrovne čestice ulaze u hranidbeni lanac.

CNN.com/technology, 16.prosinca 2007

10^8

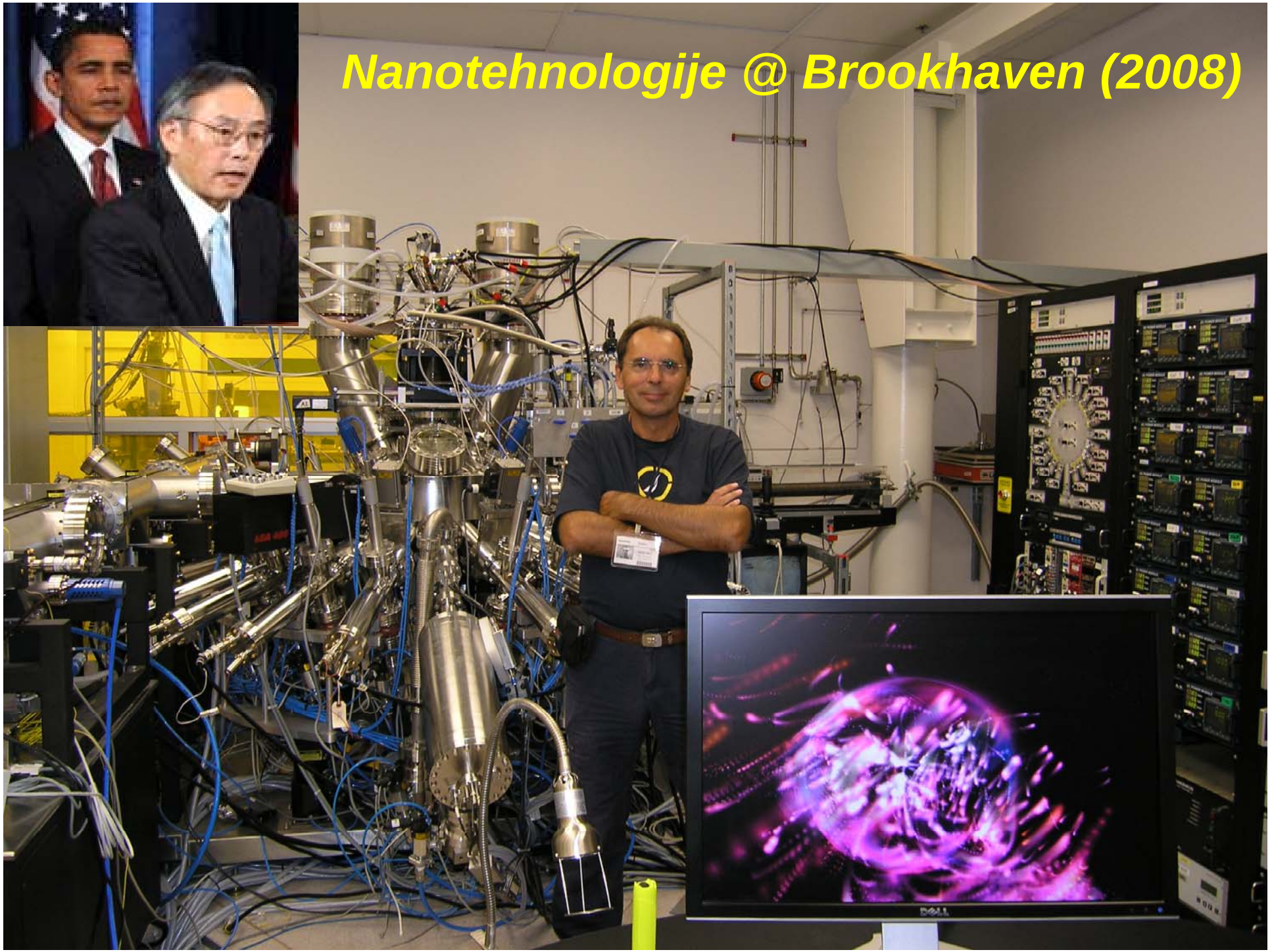
100,000 km

The Earth starts looking small...




Before it's too late. wwf.org
WWF

Koja Energetika?


Nanotehnologije @ Brookhaven (2008)

Solar Energy in the Sahara to Power Europe Gains Support

by Matthew McDermott, New York, NY on 07.22.08

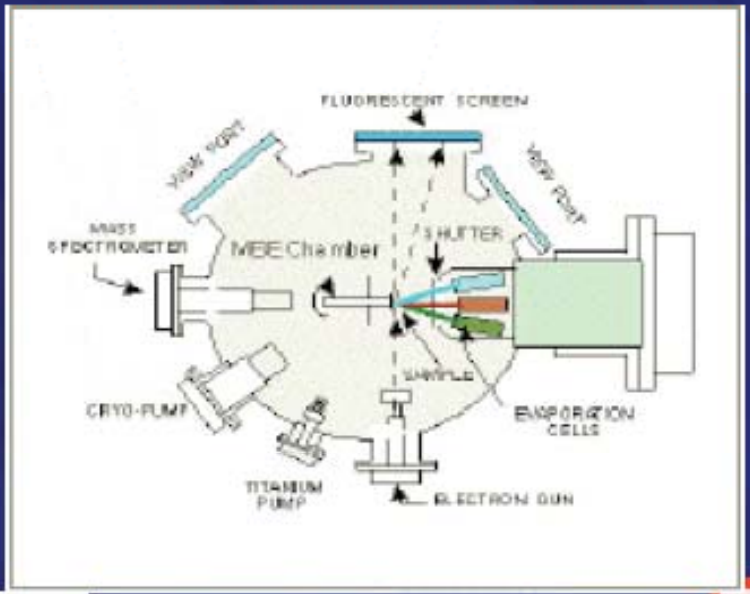
Kakva nanotehnologija

- Kakva racunala?

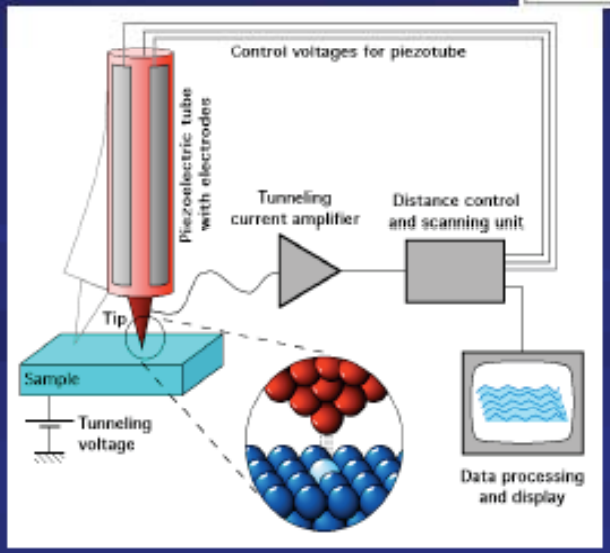

At Chinese Academy, May 2009
Prof. Zhao @Beijing: : $25M Nanotech Lab for 2012+

Our Future Set-Up:

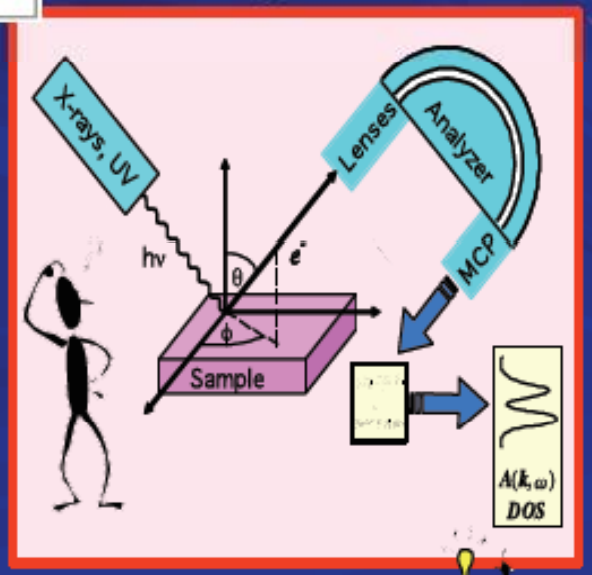
STM



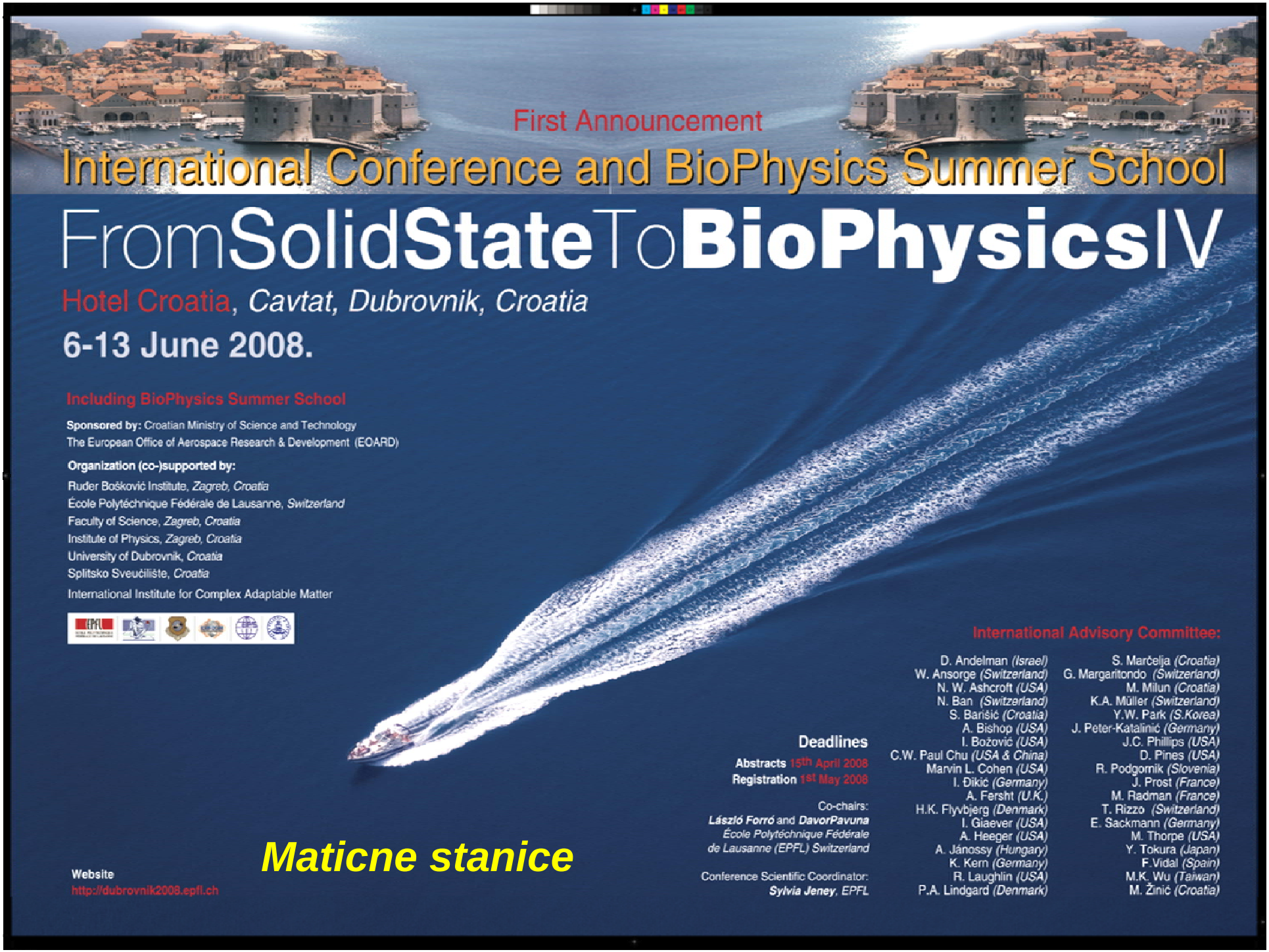
ARPES:



MBE



Bio-Medicina?


First Announcement
International Conference and BioPhysics Summer School
FromSolidStateToBioPhysicsIV
Hotel Croatia, Cavtat, Dubrovnik, Croatia
6-13 June 2008.
Including BioPhysics Summer School
Sponsored by: Croatian Ministry of Science and Technology
The European Office of Aerospace Research & Development (EOARD)
Organization (co-)supported by:
Ruđer Bošković Institute, Zagreb, Croatia
École Polytéchnique Fédérale de Lausanne, Switzerland
Faculty of Science, Zagreb, Croatia
Institute of Physics, Zagreb, Croatia
University of Dubrovnik, Croatia
Splitsko Sveučilište, Croatia
International Institute for Complex Adaptable Matter
Deadlines
Abstracts 15th April 2008
Registration 1st May 2008
Co-chairs:
László Forró and DavorPavuna
École Polytéchnique Fédérale
de Lausanne (EPFL) Switzerland
Conference Scientific Coordinator:
Sylvia Jeney, EPFL
International Advisory Committee:
D. Andelman (Israel)
W. Ansorge (Switzerland)
N. W. Ashcroft (USA)
N. Ban (Switzerland)
S. Barišić (Croatia)
A. Bishop (USA)
I. Božović (USA)
C.W. Paul Chu (USA & China)
Marvin L. Cohen (USA)
I. Đikić (Germany)
A. Fersht (U.K.)
H.K. Flyvbjerg (Denmark)
I. Giaever (USA)
A. Heeger (USA)
A. Jánossy (Hungary)
K. Kern (Germany)
R. Laughlin (USA)
P.A. Lindgard (Denmark)
S. Marčelja (Croatia)
G. Margaritondo (Switzerland)
M. Milun (Croatia)
K.A. Müller (Switzerland)
Y.W. Park (S.Korea)
J. Peter-Katalinić (Germany)
J.C. Phillips (USA)
D. Pines (USA)
R. Podgornik (Slovenia)
J. Prost (France)
M. Radman (France)
T. Rizzo (Switzerland)
E. Sackmann (Germany)
M. Thorpe (USA)
Y. Tokura (Japan)
F.Vidal (Spain)
M.K. Wu (Taiwan)
M. Žinić (Croatia)
Website
http://dubrovnik2008.epfl.ch
Maticne stanice

A sto izabiru - Mladi ?

Izbor Buducnosti (Mladih):

Ljubav

Zajednistvo

Komunikacija

Nezagadjenost !

Hrvatska ?

1’300’000
kvazi-zaposlenih !!!

Moja NOVA Hrvatska:

3% Umrezenih Znalaca

u CISTOJ Hrvatskoj :

- ≈ 100’000 umrezenih u ekonomiji znanja

Google: 20’000 zaposlenih

Profit do $1’000’000 po zaposlenom

HR programeri mogu ostvariti

BOLJE SOFTWARE KREACIJE !!!

Supra-ekonomija Znalaca je Moguca !

Nikola Tesla Hon. Ph.D. Zagreb University (1926)

- The unit for magnetic induction tesla (T)

Bolje Sutra:

Mi = Vi

Iskrenost i Cestitost

Izvrsnost i Strucnost

Fluidna Komunikacija


JUN 25 2005


荔枝
知名人仕光临

Buducnost:

Mi = Pobjednici