

## GAMOW'S YEAR IN ODESSA

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In 2004 we celebrated 100th anniversary of great physicist and astrophysicist of XX century, corresponding member of USSR Academy of science, professor G.A.Gamow.

G.Gamow was born in Odessa on March 4, 1904, in teachers' family. Their roots were connected with significant events in Ukrainian and Russian history. Mother's side (A.A.Lebedintseva) was presented by the superior priesthood. His grand-father Arseniy Lebedintsev was Odessa cathedral archpriest and Chairman of Kherson ecclesiastic society. By father's side there were military people. Another grand-father was Army Commander in Kishinev.

G.Gamow graduated from Odessa gymnasium and continued his education in Odessa University. At the same time he was working as calculator in astronomical observatory.

Then he graduated from St.-Petersburg University and started to work in Leningrad, Cambridge, Copenhagen, Paris. For a long time he was working as professor in Cambridge University, USA.

G.Gamow achieved great results in quantum mechanics, atomic and nuclear physics, astrophysics, cosmology, biology and history of physics. He was working with such famous scientists of XX century as A. Einstein, N. Bor, E. Reserford, Maria Kyjry, L. Landau.

Among his main scientific achievements are creation of alpha and beta decay, use of nuclear physics for explaining the star evolution theory. G.Gamow worked out the theory of "hot Universe" - basis of nowadays cosmology explaining the Universe creation theory.

G.Gamow was the first who could decipher the genetic code. He was an eminent popularizer of science. In 1994 and 1999 large-scale international conferences were carried out. They were devoted to the 90th and 95th anniversary of Gamow. After these events the Public Garden after Gamow appeared.

At the February session of Scientific Unit of Odessa National University professor V.Smyntyna declared about carrying out "Gamow's Year" in Odessa. Also there was told about setting up an annual "Gamow's scholarship" for the best students in astronomy and physics, and about issue of Jubilee Gamow's medal.

Program "Gamow's Year" was announced on TV and mass-media. Firstly the ceremonial session was carried out in the House of Scientists. Professor

V.Smyntyna opened the evening. Dr. M.Ryabov, Dr. A.Andrievsky, Prof. I.Andronov, Prof. S.Andrievsky, Prof. A.Zhuk advanced with reports. Professor I.L.Gamow (Rector of Russian-Pridnestrivsky University) spoke about Gamow's family history. After the musical ensemble "Lyra" had performed the memorial party was over.

Regional and municipal conferences "Modern astronomy in school education" were also devoted to Gamow's anniversary. They were carried out by support of the Regional and municipal government of education in Odessa.

Second Municipal conference was held on 18th of March in the House of Scientists. Regional conference was carried out in Assembly Hall of Odessa national university in April. Professor S.Andrievsky, I.Andronov, assistant professor M.Ryabov, A.Khalevin, scientific workers L.Kudashkina and V.Marsakova took part in it. A Resolution supporting astronomical education in Odessa and Odessa region was set up.

At every faculty throughout 2003-2004 and 2004-2005 academic years lectures were delivered - "Universe around us" explaining the nowadays scientific picture of the world. Great contribution in it had been made by G.Gamow.

International scientific conference "Astrophysics and Cosmology after Gamow - theory and observations" (8-14 August 2004) was held at Odessa National University. Chairman of SOC was professor G.S.Bisnovaty-Kogan (Russia). Vice-chairmen SOC were professor A.Zhuk (ONU, Odessa) and professor S.Silich (Mexico, Ukraine). Among members of Scientific and Memorial committees were such famous astrophysicist as professor I.Novikov (Denmark), professor A.Cherepashchuk (Russia), P.Gonzalez-Dias (Spain), R.Terlevich (Mexico), V.Rudenko (Russia), I.Gamow (USA), Ya.Yatskiv (Ukraine).

Conference worked in 8 sessions. Chief of the Memorial meeting was professor A.Chernin (Russia). Chief of the session "Large-scale structure of the Universe and gravitational lenses In Universe" - professor B.Novosjadly (Lvov, Ukraine). Session "Neutron stars and black holes" - professor M.Porokhov (Moscow, Russia). Session "Nucleosynthesis in stars, stars creation, interstellar space" - pro-

fessor N.Bochkarev (Moscow, Russia). Session "Astrophysics of high energies" - professor B.Gnatyk (Kyiv, Ukraine). Session "Small solids in solar system" - professor K.Churyumov. Session "Astronomy in Odessa" - professor V.Karetnikov (Odessa, Ukraine). Conference was opened by rector of ONU professor V.Smyntyna. Famous scientists and participants of the conference were awarded with Gamow's medals.

Many letters with wishes of future successful work were sent to SOC and LOC orgcommittee. The most important congratulation was from the Presidium and Department of physics and astronomy of Ukrainian National academy of science (UNAS), sent by Vice-President of NAS Academician A.Naumovets and academician-secretary V.Loktev.

Participants of the conference were greeted by: President of Ukrainian Astronomical Association (UAA), Academician of UNAS Ya.Yatskiv, Vice-president of European Astronomical Society, corresponding member of RAS, Prof. A.Cherepashchuk, chairman of International Bureau of Euro-Asian Astronomical Society Prof. N.Bochkarev, Russian General Consul in Odessa F.Dovzhenyuk, Academician-secretary of Georgian Academy of science Prof. D.Lominadze. President of UAA Ya.Yatskiv presented to ONU the certificate of naming a minor planet "Gamow". At the memorial Session were presented 10 reports and 3 video reports were presented: About 200 scientists from 18 countries participated in the conference. The majority was from Ukraine and Russia. Representatives of USA, France, Spain, Germany, Poland, Slovakia, Serbia, Italy, Mexico, Japan, Byelorussia, Kazakhstan, Turkmenistan, Denmark, Georgia and Great Britain were presented too. At the plenary session were presented 20 reports, connected sections of cosmology and astrophysics, in which Gamow worked. And the most important thing is that there appeared and new directions of observations. At the 7 scientific sessions 80 oral reports and 30 poster reports were presented. Results of the conference work will be observed in special edition "Conference Transactions" by the Cambridge Press publisher and in the magazine "Odessa Astronomical Publications".

Participants of the conference have met with mayor of Odessa R.Bodelan. During this meeting questions of science development and organizing Gamow's centre with Planetarium were discussed. Conference was held in "Gamow's style" - with surprises and unexpectedness.

The weather was fine and favorable for the guests of the city. This was demonstrated during traditional "sea beach session".

Gamow's conferences are carried out 3rd time in every 5 years and have their special traditions. Between them Gamow's summer schools take place: "Astronomy and beyond: Astrophysics, Cosmology and Astrobiology". Its organizers were: Astronomical

Observatory and Chair of Astronomy of Odessa National University, Ukrainian Astronomical Association, Euro-Asian Astronomical Society, Odessa Astronomical Society. Chairman of the conference organizing committee was Rector of ONU V.A.Smyntyna. Vice-chairmen - Prof. V.G.Karetnikov and Dr. M.Ryabov. I.Chernishova, S.Melikyants, A.Pilipenko took part in Secretariat Gamow's Conference and Gamow Summer School in different years. All problems were solved by the orgcommittee with help of employees of Astronomical Observatory and Department of Astronomy of ONU. Carrying out the conference became possible thanks to all the pro-rectors and departments of ONU. At the end of the conference participants adopted the Resolution.

### **Resolution of International Scientific Conference: "Post Gamow's Astrophysics and Post-Gamow's Cosmology", devoted to 100th anniversary of G.Gamow**

*Participants of the conference presenting 17 countries of Europe, America and Asia, paid a tribute of respect to scientific achievements of G.Gamow, which were always created on the junction of different sciences and sections of astrophysics, cosmology and biology.*

*G.Gamow was the first to use quantum mechanics for explaining alpha decay. With E.Teller he worked out the theory of beta decay, at first constructed the star evolution theory, based on nuclear energy, and showed the role of the neutron in the explosion of supernova and new stars.*

*G.Gamow offered the model of "Hot Universe". With R.Alfer and R.Kharman calculated the theory of Universe creation and predicted the existence of Relict Radiation. He also worked out the system of information code of DNK protein molecule and deciphered the genetic code.*

*These theories are the basis of today's science. Ideas and methods used by G.Gamow anticipated the main directions of science development in XX and XXI centuries.*

*G.Gamow made a great contribution to science popularization, published many popular scientific books, and for this he was awarded with the prestige international YUNESKO prize. And today this work of his is vitally important for the influx of youth in science, for popularization of physics and astronomy at schools and institutes.*

*G.Gamow worked in many international centers of Europe and USA (Leningrad, Cambridge, Copenhagen, Paris, Washington, Colorado, Copenhagen, Gettingen), but in his scientific style always assisted "Odessa roots" - features of the city, where he was born and studied.*

*Participants of the conference think it necessary:*

1. To thank Astronomical Observatory and Department of Astronomy of ONU after Mechnikov and Odessa Astronomical Society for organizing and carrying out the international scientific conferences, devoted to the memory of G.Gamow in 1994, 1999, and especially in 2004 - in the year of his 100th anniversary.

2. To consider the International Gamow's scientific conferences "Astrophysics and Cosmology after Gamow" as traditional and to carry out them every 5 years in Odessa.

3. To support the proposals about organizing an International Gamow's Scientific-Educational Centre with Planetarium on the territory of astronomical observatory.

4. To support the proposals about organizing in Odessa the International Gamow's Fund for development science and education.

5. To appeal to institutes and universities of those countries, where G.Gamow worked, to International physics and astrophysics societies with information about carrying out the conference with proposal to support organizing an International Gamow's Scientific-Educational Centre and Odessa International Gamow's Fund.

6. To appeal to President of Ukrainian National Academy of science and to President of Russia Academy of science about issue of annual academic Gamow's medal, awarded for scientific achievements in theoretical physics and astrophysics.

7. To support an annual carrying out the International Gamow's summer astronomical school: "Astronomy and beyond: Astrophysics, Cosmology and Astrobiology" for young scientists, students and graduates (on the basis of ONU).

8. To welcome carrying out in Odessa regional and municipal teachers' conferences "Today's Astronomy in school education" for development astronomical education in schools.

9. To support the proposal of Astronomical observatory and Chair of astronomy of ONU about creation Summer astronomical Center for Odessa region schools (on the basis of Astronomical station Kryzhanovka).

10. To support proposal of ONU about setting up a memorial plaque on the house, where G.Gamow was born, and memorable token in the City Public Garden named after G.Gamow in Odessa.

