



THE GAMOW'S ODESSA ASTRONOMICAL SUMMER SCHOOL FOR YOUNG SCIENTISTS

August 12-18, 2002



THE SCIENTIFIC CONFERENCE «CHEMICAL AND DYNAMIC EVOLUTION OF STARS AND GALAXIES»

August 18-24, 2002



PROGRAM

Odessa, Ukraine

THE GAMOW'S ODESSA ASTRONOMICAL SUMMER SCHOOL FOR YOUNG SCIENTISTS

«Astronomy and beyond: Astrophysics, Cosmology and Astrobiology»

(12-18 August 2002)

SCIENTIFIC PROGRAM

(all abstracts of reports were been published in School web page: <http://aoss.pochtamt.ru>)

Monday, 12.08.2002

9.00-23.00 ARRIVAL AND REGISTRATION

19.00-21.00 GAMOW'S DAY IN ODESSA (VIDEO-SURVEY)

22.00-00.00 – «STARS RAIN» – PERSEID METEORS SHOW

Tuesday, 13.08.2002

9.00-9.30 OPENING OF THE SCHOOL

LECTURES:

Chair: Prof. G.S. Bisnovatyi-Kogan

9.30-10.30 *Prof. Chernin A.D.* (SAI MSU, Moscow, Russia): «George Gamow and his "world line"».

10.30-10.50 COFFEE-BREAK

10.50-11.50 *Prof. Novosyadlyj B.S.* (AO LNU, Lviv, Ukraine): «Large-scale structure of the Universe: observed data and theoretical models».

11.50-12.50 *Dr. Wszolek B.* (Jagiellonian Univ. Astron. Obs., Krakow, Poland): «Diffuse Interstellar Bands».

13.00-14.00 LUNCH

THE WORKING SECTION «MODERN PROBLEMS OF ASTROPHYSICS AND COSMOLOGY» (short reports 15-20 min)

Chair: Dr. S.M.Andrievsky

15.00-15.25 *Dr. Bayazitov U.Sh.* (Bashkir State University, Sibay, Russia): «Influence of lines blanketing to intensities of NonLTE calculated FeI lines in late type stars».

15.25-15.50 *Dr. Chumak O.V.*, *Dr. Talalaev A.A.* (SAI MSU, Moscow, Russia): «Some results of investigation of ratio between mortal industrial injuries of staff of power production firms and solar activity».

15.50-16.15 *Dr. Ovcharenko A.A.*, *Shkuratov Yu.G.* (Astron. Obs. of Kharkov Univ., Ukraine): «Modeling the negative polarization of Galilean satellites».

16.15-16.35 COLD WATER BREAK

16.35-18.20 POSTER SESSION (10 min. presentation of poster + discussion)

Chair: Prof. N.S. Komarov

1. *Barsunova O.Yu.*, *Shaliapina L.V.* (Astron. Inst. of St.Petersburg St. Univ., Russia): «Long-slit spectra of peculiar galaxy NGC 7468».

2. *Nirski Ja.* (N. Copernicus Univ., Torun, Poland): «Broad Diffuse Interstellar Bands».

3. *Kostina M.V.* (Astron. Inst. of St.Petersburg St. Univ., Russia): «Metal enrichment of the intergalactic medium at high redshifts».

4. *Nedeljkovic S., Milisavljevic D.* (Univ. of Belgrade, Phys. Depart., Yugoslavia): Vertical Propagation of the MHD Waves in a Stratified and Magnetized Plasma.
5. *Malov O. I., Malofeev V. M.* (Pushchino RAO, Russia): «Flux densities and profile shapes of the weak pulsars at 102 and 111 MHz».
6. *Ershov A.A., Kuzmin A.D.* (Pushchino RAO, ASC FIAN, Russia): «Giant pulses from the pulsar PSR B1112+50».
7. *Seleznyov A.D.* (M. Planck Inst. fuer Aeron., Katlenburg-Lindau, Germany): «The origin of solar variability, with an application to the search for extrasolar planets».
8. *Portyankina G., Markievicz W. J.* (M. Planck Inst. fuer Aeron., Katlenburg-Lindau, Germany): «Atmosphere – surface vapor exchange and ices in the Marsian polar regions».
9. *Bondarenko S. Yu. and Ovcharenko A.O.* (AO KhNU, Ukraine): «Simulating photometric measurements with new photometer/polarimeter of Kharkov Observatory».

18.30-19.30 **DINNER**

20.00 **FURCHET**

23.00-00.00 – «Stars rain» – Perseid Meteors Show

Wednesday, 14.08.2002

LECTURES:

Chair: Prof. V.G. Gorbatsky

9.00-10.10 *Prof. Bisnovatyi-Kogan G.S.* (ISR, Moscow, Russia): «Generation of magnetic fields in accretion discs around black hole».

10.10-10.30 **COFFEE-BREAK**

10.30-11.40 *Prof. Pilyugin L.S.* (MAO NASU, Kiev, Ukraine): «Chemical evolution of galaxies: the origin and development of the base ideas».

11.40-12.50 *Prof. Malov I.F.* (PRAO FIAN, Moscow, Russia): «Radio pulsars and «magnetars».

13.00-14.00 **LUNCH**

THE WORKING SECTION «MODERN PROBLEMS OF ASTROPHYSICS AND COSMOLOGY» (short reports 15-20 min)

Chair: Prof. I.L. Andronov

15.00-15.25 *Dr. Flin P.* (Bogoliubov Lab. of Theor. Phys., Dubna, Russia): «Philosophical Consequences of Astronomical Consideration».

15.25-15.50 *Konobeevski E.S., Mordovskoy M.V., Skorkin V.M.* (Institute for Nuclear Research RAN, Moscow, Russia): «The cosmic gamma-ray detector».

15.50-16.15 *Dr. Apunevych S.Ye.* (AO LNU, Lviv, Ukraine): «The value of cosmological constant».

16.15-16.35 **COLD WATER BREAK**

16.35-18.20 **POSTER SESSION** (10 min. presentation of poster + discussion)

Chair: Dr. B. Wszolek

1. *Nykytyuk T.A.* (MAO NASU, Kiev, Ukraine): «A formation of the halo stellar population in spiral and elliptical galaxies».

2. *Chernyshova I.V.* (AO ONU, Odessa, Ukraine): «The lambda Bootis type stars».

3. *Nagel E.A.* (Jagiellonian Univ. Astron. Obs., Krakow, Poland): «Mission and observations of Infrared Space Observatory».

4. *Kurzaev D.A.* (MSU SAI, MAVR SAO RAS, Moscow, Russia): «The quadruple star system Fin332».

15.25-15.50 *Alexandrov B.G.* (Inst. of Biology South Seas, NAN Ukraine), Ryabov M.I (AO IRA NASU, Odessa, Ukraine): «Evolution of marine microorganisms and its connection with solar and geophysical activities».
15.50-16.10 *Prof. Khrapko R.I.* (Moscow Aviation Institute, Russia): «A new anthropic principle»
16.10-16.35 *Dr. Kudashkina L.S.* (AO ONU, Odessa, Ukraine): «Astrobiology and SETI».
16.35-16.55 **COLD WATER BREAK**

16.55-18.20 **POSTER SESSION** (10 min. presentation of poster + discussion)

Chair Prof. Novosyadlyj B.S.

1. *Kuburovic N.D., Valent V., Todorovic S.* (Univ. of Belgrade, Phys. Depart., Yugoslavia): «The use of the solar energy in the photochemical and photocatalytic process».
2. *Andjelkovic Z.V.* (Univ. of Belgrade, Phys. Depart., Yugoslavia): «Theological arguments in modern cosmology».
3. *Obridko V.N., Ragulskaya M.V.* (IZMIRAN, Troitsk, Russia), Ryabov M.I. (AO IRA NASU, Odessa, Ukraine), *Grabko N., Poletaeva L.N.* (Odessa Ecological University): «Investigation of the influence of solar and geophysical activities on the human health (in Moscow and Odessa)».
4. *Dr. Ryabov M.I.* (AO IRA NASU, Odessa, Ukraine), *Fedchuk A.S., Lozitsky V.P.* (I.I.Mechnikov Ukrainian Research Anti-Plague Institute, Odessa, Ukraine): «Analysis of cosmic and geophysical factors influence on influenza viruses reproduction».
5. *Tolkunova Ju.* (Astronomical Observatory of Kharkov University, Ukraine): «Interaction of solar wind with regional magnetic anomalies on the Moon».
6. *Bakunina I.A.* (N.Novgorod, Planetarium, Russia) «On the asymmetry of the solar bipolar active regions from the appearance of the sign change of polarization of the radio emission on the wave of 5.2 cm and solar flares».
7. *Derevyagin A.V., Kravetz R.O., Litvinenko I.O.* (AO IRA NASU, Odessa, Ukraine): «Definition of metrological characteristics of hardware complex RT URAN-4 at reception of non-stationary signals».
8. *Litvinenko O.À., Panishko S.E., Podbelsky S.A.* (AO IRA NASU, Odessa, Ukraine, Odessa Academia of Ecology): «Meteorological conditions – an ionosphere – HF observation of space radiosources».
9. *I.O.Litvinenko, O.A.Litvinenko* (AO IRA NASU, Odessa, Ukraine): «Envelope curve characteristics of solar HF radiobursts».

18.30-19.30 **DINNER**

20.00 **BANQUET**

Saturday, 17.08.2002

LECTURES:

Chair: Prof. A.D. Chernin

9.00-9.35 *Prof. Miroshnichenko L.I.* (IZMIRAN, Troitsk, Russia): «Radiation hazard in space: physical and applied aspects».

9.35-10.10 *Prof. Miroshnichenko L.I.* (IZMIRAN, Troitsk, Russia): «Astrophysical aspects in the studies of solar cosmic rays».

10.10-10.30 **COFFEE-BREAK**

10.30-11.40 *Dr. Andrievsky S.M.* (AD ONU, Odessa, Ukraine): «Astrochemistry of the stars».

11.40-12.40 *Prof. Komarov N.S.* (AO ONU, Odessa, Ukraine): «Evolution of matter from nuclides to chemical elements».

CLOSING OF SCHOOL

THE CONFERENCE «CHEMICAL AND DYNAMIC EVOLUTION OF STARS AND GALAXIES»

Ukraine, Odessa, Chernomorka, August 18-24, 2002

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<http://www.conference.pochtamt.ru>)

Sunday, 18.08.2002

THE DAY OF ARRIVAL

9.00-20.00 **REGISTRATION**

Monday, 19.08.2002

9.00-12.00 **REGISTRATION**

OPENING OF THE CONFERENCE

Chair: Gorbatsky V.G.

11.00-11.30 *Komarov N.S.* History of working-group «The stellar atmospheres».

13.00-14.00 **LUNCH**

15.00-15.35 *Chernin A.D.* The galaxies with polygonal of spiral structure.

15.35-16.20 *Shustov B.M.* Galaxies and intergalactic substance – evolutionary interrelations.

16.20-16.40 **COFFEE-BREAK**

Chair: Mishenina T.V.

16.40- 17.00 *Bayazitov U.Sh.* Influence of lines blanketing to intensities of NonLTE calculated FeI lines in late type stars.

17.00-17.20 *Bayazitov U.Sh., Galiev A.K.* About iron abundance in the stars and Sun.

17.20-17.45 *Boyarchuk A.A., Antipova L.I., Boyarchuk M.E., Pakhomov Yu.V.* Chemical abundances in the atmospheres of red giants.

17.45-18.05 *Boyarchuk A.A., Pakhomov Yu.V., Antipova L.I., Boyarchuk M.E.* The analysis of abundances of chemical elements in atmospheres of mild barium stars.

18.30-19.30 **DINNER**

20.00 **FURCHET**

Tuesday, 20.08.2002

Chair: Lyubimkov L.S.

9.00-9.45 *Bisnovaty-Kogan G.* Atoms in magnetic fields: possible origin of chemical anomalies in magnetic stars.

9.45-10.20 *Leushin V.V.* Evolution of chemical abundance of extreme He-rich stars.

10.20-10.45 *Tarakanov P.A.* Star formation and small-scale structure of ISM.

10.45-11.05 **COFFEE-BREAK**

Chair: Leushin V.V.

11.05-11.50 *Pilyugin L.S.* The distribution of abundance of oxygen and nitrogen in interstellar medium in a disk of ours and other galaxies.

11.50-12.25 *Novosyadly B.S.* Pre-galactic composition of matter and cosmological parameters from complementary observations of the Universe.

12.25-12.45 *Mishurov Yu.N., Lepine JR.D., Acharova I.A.* Corotation: its influence on the chemical abundance pattern of the Galaxy.

13.00-14.00 **LUNCH**

Chair: Sakhibullin N.A.

15.00-15.25 *Zakhozaj V.A., Pedash Ju.F.* Interpretation of observed initial spectra of stars and substars mass.

15.25-16.00 *Lyubimkov L.S.* On the Crimean-Texas project «Surface abundances of light elements for a large sample of early B-type stars».

16.00-16.25 *Shavrina A.V., Polosuchina N.S.* Some features of roAp stars spectrum.

16.25-16.45 **COFFEE-BREAK**

Chair: Shavrina A.V.

16.45-17.05 *Kasimova E.R., Shchekinov Yu.A.* Dust production in damped Ly-alpha systems. I. Chemical evolution of spiral galaxies vs DLA systems.

17.05-17.25 *Kasimova E.R., Shchekinov Yu.A.* Dust production in damped Ly-alpha systems. II. Chemical evolution of dwarf galaxies vs DLA systems.

17.25-17.50 *Khalack V.R.* Features of magnetic field modelling at the surface of some magnetic CP stars.

17.50-18.10 *Havrylova N.* Chemical composition of galactic planetary nebulae: new determination.

18.30-19.30 **DINNER**

19.30-22.00 **MEETING OF COUNSEL OF EAAS**

Wednesday, 21.08.2002

Chair: Tsymbal V.V.

9.00-9.40 *Goldman I.* Turbulent Dynamics of gas and dust in the interstellar medium of the SMC.

9.40-10.05 *Flin P.* Subclustering in Abell clusters.

10.05-10.40 *Kryvdyk V.* Nonthermal emission from stars.

10.40-11.00 **COFFEE-BREAK**

Chair: Shchekinov Yu. A.

11.00-11.35 *Andrievsky S.M.* Metallicity distribution in a galactic disk.

11.35-12.10 *Bochkarev N.G.* The molecules in interstellar medium.

12.10-12.30 *Dedikov S.Yu.* Numerical simulations of turbulent mixing of metals ejected by a starburst into the intergalactic medium.

12.30-12.50 *Gopka V.F., Mishenina T.V., Yushchenko A.V., Chulhi Kim* Detail analysis of chemical abundance of Halo star HD221170.

13.00-14.00 **LUNCH**

Chair: Zacs L.

15.00-15.25 *Kasimova E.R., Shchekinov Yu.A.* Chemical evolution of Low Surface Brightness disk galaxies vs DLA systems.

15.25-16.00 *Marsakov V.A., Borkova T.V.* Subsystem in the Galactic halo.

16.00-16.20 *Malov I.F., Machabeli G.Z., Malofeev V.M.* The new model «magnetar».

16.20-16.40 **COFFEE-BREAK**

Chair: Pavlenko Ya.

16.40-17.15 *Mishenina T. V.* Chemical evolution of Galaxy: from Li to Eu.

17.15-17.35 *Chernyshova I.V.* Chemical abundances and evolutionary status of some lambda Bootis type stars and FBSwl.

17.35-18.00 *Usenko I. A.* Sodium, Magnesium and Aluminium in the Atmospheres of Galactic Open Clusters Cepheids.

18.00-18.20 *Skorkin V.M.* Cluster structure of the nuclides and elemental abundances.

18.30-19.30 **DINNER**

Thursday, 22.08.2002

Chair: Bisnovatyi-Kogan G.S.

9.00-9.35 *Balega Ju.Ju., Leushin V.V.* Multiple stars on observations with the high resolution.

9.35-10.25 *Shchekinov Yu. A.* Chemical history of the intergalactic medium.

10.25-10.45 **COFFEE-BREAK**

Chair: Shustov B.M.

10.45-11.20 *Zacs L.* S-process nucleosynthesis in AGB-stars: some observational aspects.

11.20-11.45 *Matvienko E.E., Shchekinov Yu.A.* Destruction of irregular interstellar clouds by a shock wave.

11.45-12.20 *Al'Vardat M., Balega Ju.Ju., Leushin V.V., Pluzhnic E.A.* The spectra and specl-interferometric double star 41 Dra.

12.20-12.45 *Kostina M. V.* Metal enrichment of the intergalactic medium at high redshifts.

13.00-14.00 **LUNCH**

Excursions (city tour, Odessa National university museums, city museums...)

Friday, 23.08.2002

Chair: Novosyadly B.S.

9.00-9.40 *Pavlenko Ya.* Infrared spectra of cool stars – nature and models.

9.40-10.05 *Chumak O. V.* Some results of investigation of relationship between mortal industrial injuries of staff of power production firms and solar activity.

10.05-10.25 *Moiseev A. V., Valdes J., Chavushan V.H.* The circumnuclear 2D-kinematics of double-barred galaxies.

10.25-10.45 **COFFEE-BREAK**

Chair: Zakhozaj V.A.

10.45-11.10 *Vasiliev E.O., Shchekinov Yu.A.* Globular clusters as they can be seen in Ly-alpha and H-alpha at $z > 1$.

11.10-11.35 *Vorobyov E.I., Bizyaev D.* Propagation group velocity of ring density waves in collisional ring galaxies.

11.35-12.10 *Malofeev V.M., Malov O.I.* Discovery pulse radio emission from two AXPs.

12.10-12.35 *Bochkarev N.G., Ryabov M.I.* The investigation of structure ionized part of galactic super envelope of radio astronomical methods.

12.35-12.55 *Tsivilev A.P., Sorochenko, Cortiglioni et al.* Carbon and Helium in Orion A Nebula by radio astronomical observations.

13.00-14.00 LUNCH

Chair: Pilyugin L.S.

15.00-15.20 *Tereshchenko A.* The angle velocity of rotation of gas and dust matter in stationary stellar systems.

15.20-15.45 *Berczik P.* Chemodynamical Modelling of Galaxy Formation and Evolution.

15.45-16.10 *Panko E.A., Evsyukov A.P.* VRI photometry of NGC 7419.

16.10-16.50 *Komarov N.S.* Evolution of nuclides.

16.50-17.10 COFFEE-BREAK

Chair: Komarov N.S.

17.10-18.10 POSTER SESSION

1. *Chumak O.V.* Ratio of area-flux, contour-area and fractal properties of magnetic fluxes in solar active regions.

2. *Delgado D.M., Boyarchuk A.* Searching for dwarf spheroidal galaxies around Milky Way young globular clusters.

3. *Grunskaya L.V., Efimov V.A., Gavrilov I.N., Appolonov Ju.A.* The gravitational wave radiation of the binary stars and electrical and magnetical Earth field.

4. *Karachentsev I. D., Smirnova A. A.* HIPASS data for flat edge-on galaxies.

5. *Khan S.* Preliminary abundance analysis in atmosphere of CP star HD52696.

6. *Kryvult* The distribution of substructures in clusters of galaxies.

7. *Nirski Ja.* Investigation into broad interstellar absorption lines.

8. *Nykytyuk T.V.* A formation of the halo stellar population in spiral and elliptical galaxies.

9. *Tsybal V.V.* Some new ideas in processing and analyze of stellar spectra.

10. *Bannikova E.Yu.* The features of hydrodynamic accretion with magnetic field for Sgr A*.

11. *Kovtyukh V.V., Gorbaneva T.I., Kantzen L.E., Mishenina T.V.* The effective temperature of K-giants.

12. *Panchuk V.E.* The technique of spectroscopy of stars – history, today, new horizons.

13. *Panchuk V.E., Klochkova V.G., Piskunov N.E., Monin D.N., Yushkin M.V., Ermakov S.V., Naidenov I.D.* The complex of apparatus for spectroscopic investigation of stars on 6m telescope BTA.

14. *Moiseev A. V.* Kinematics of the central kpc in active galaxy NGC 6951.

18.10-18.20 CLOSING OF THE CONFERENCE

Komarov N.S.

18.30-19.30 DINNER

20.00 BANQUET

Organizers of the Gamow's School: Odessa National University, Astronomical Observatory and Astronomy department, Euro-Asian Astronomical Society (EAAS), Ukrainian Astronomical Association (UAA), Odessa Astronomical Society (OAS).

Organizers of the Conference: Odessa National University, Astronomical Observatory and Astronomy department, Euro-Asian Astronomical Society (EAAS), Odessa Astronomical Society (OAS).

The conference and the school to be held with the financial support of INTAS.

Scientific Organizing Committee (SOC) of the Gamow's School:

Co-Chair SOC: A.D. Chernin (SAI MSU, Moscow, Russia), *N.G. Bochkarev* (SAI MSU, Moscow, Russia), *V.G. Karetnikov* (AO ONU, Odessa, Ukraine), *M.I. Ryabov* (AO IRA NASU, Odessa, Ukraine).

Members SOC: *V.N. Obridko* (IZMIRAN, Troitsk, Russia), *G.S. Bisnovaty-Kogan* (ISR, Moscow, Russia), *A.A. Konovalenko* (IRA NANU, Kharkov, Ukraine), *L.S. Pilyugin* (MAO NASU, Kiev, Ukraine), *T.V. Mishenina* (AO ONU, Odessa, Ukraine), *I.L. Andronov* (AD ONU, Odessa, Ukraine), *N.S. Komarov* (AO ONU, Odessa, Ukraine), *B.G. Alexandrov* (Biology Department ONU, Odessa, Ukraine), *S.M. Andrievsky* (AD ONU, Odessa, Ukraine).

Scientific Organizing Committee (SOC) of the Conference:

- *Prof. N.S. Komarov* (AO ONU, Chair, Ukraine)
- *Prof. G.S. Bisnovaty-Kogan* (ISR, Moscow, Russia)
- *Prof. N.G. Bochkarev* (SAI MSU, Moscow, Russia)
- *Prof. K.I. Churyumov* (MAO NASU, Kiev, Ukraine)
- *Prof. A.A. Konovalenko* (IRA NASU, Kharkov, Ukraine)
- *Prof. L.S. Lyubimkov* (CrAO, Crimea, Ukraine)
- *Prof. N.A. Sakhibullin* (AO KSU, Co-Chair, Kazan, Russia)
- *Dr. L.S. Pilyugin* (MAO NASU, Kiev, Ukraine)
- *Prof. Ya.V. Pavlenko* (MAO NASU, Kiev, Ukraine)
- *Prof. B.M. Shustov* (IAAS, Moscow, Russia)
- *Prof. A.A. Sapar* (IAPhA, Tyravere, Estonia)
- *Prof. L. Zacs* (IAPS LU, Riga, Latvia)

Local Organizing Committee (LOC) of the Gamow's School: *M.I. Ryabov* (chair), *I.V. Chernyshova* (co-chair), *I.A. Egorova*, *B.A. Murnikov*, *A.A. Pilipenko*.

Local Organizing Committee (LOC) of the Conference: *N.S. Komarov* (Chair), *S.M. Andrievsky*, *Yu.V. Beletsky*, *I.V. Chernyshova*, *A.V. Dragunova* (secretary), *T.I. Gorbaneva*, *V.V. Kovtyukh*, *S.M. Melikyants*, *T.V. Mishenina*, *L.F. Orlova*, *A.A. Pilipenko*, *T.V. Shevchuk*, *S.V. Vasil'yeva*.