National Taras Shevchenko University of Kyiv
Department of Astronomy and Space Physics

17th Young Scientists' Conference on Astronomy and Space Physics

Abstracts

Kyiv, 2010

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Katerina Agienko
Daria Dubinovska
Volodymyr Masliukh

Address for correspondence:

YSC, P.O.Box 7, Kyiv-22, 03022, Ukraine
e-mail: *ysc@univ.kiev.ua*

Address:

Astronomy and Space Physics Department,
Faculty of Physics,
National Taras Shevchenko University of Kyiv,
Glushkova ave., 2, Kyiv, 03127, Ukraine.
Phone: +(380) 44-526-44-57
Fax: +(380) 44-526-45-07

Preface

This year Young Scientists' Conference on Astronomy and Space Physics is held for the seventeenth time. We all have been looking forward to the annual meeting of astronomers at National Taras Shevchenko University of Kyiv. Now it has friendly opened its doors for participants from all over the world.

Young Scientists' Conference has a long history. The first meeting was organized by Physics faculty of National Taras Shevchenko University of Kyiv as a students' conference in 1994. Since 1996 our conference has welcomed young researchers from other universities and scientific institutions. During 1994-2009 participants from Ukraine, Russia, Poland, France, Germany, Spain, Sweden, Libya, Egypt, Japan, Finland, Turkey, China, Slovakia, Armenia, USA and other countries participated in Young Scientists' Conference.

The conference is aimed at strengthen the position of astronomy and promote space physics research. The lectures and reports presented by the participants traditionally reflect modern trends and actual problems of the science, the sessions facilitate informational exchange about the latest innovations and achievements.

On behalf of the organizing committee we would like to express our gratitude to the invited lecturers and participants for contributing lectures and reports. We are especially grateful to Prof. V.M. Ivchenko for the help in conference organization.

Grygorii Polinovskyi and
Local Organizing Committee

PROGRAMME

Monday, April, 26

10.00-14.00 - Registration
14.15-14.35 - Official opening.

Section 'Solar System & Extrasolar Planets'

14.35-15.20 Siegfried Franck *How Many Habitable Planets Are There in the Milky Way?* **(invited)**

15.20-15.50 Tea-break

15.50-16.05 Joanna Drazkowska, M. Hanasz, K. Kowalik *Particle Module of Piernik MHD Code* **(12+3)**

16.05-16.20 Anna Rozenkiewicz *Modeling of Stellar Radial Velocities with the Genetic Algorithms* **(12+3)**

16.20-16.35 Beata Deka *Ecospheres around Binary Stars* **(12+3)**

16.35-16.50 Wieńczysław Bykowski *The Monitoring of the Transiting Exoplanet WASP-12 b* **(12+3)**

16.50-17.05 Nadiia Kostogryz *Vertical Distribution of Scattering Optical Depth in the Uranus' Atmosphere* **(12+3)**

17.05-17.20 Sergii Zaitsev *The Phase-Angle and Longitude Dependence of Polarization for Iapetus near Opposition* **(12+3)**

17.20-17.35 Sergey Karashevich, I. A. Verestchagina, E. N. Sokov, V. Yu. Slesarenko, A. V. Devyatkin *Observations and Research of Minor Solar System Bodies* **(12+3)**

17.35-17.50 Remigiusz Pospieszynski *Design Process of Ion Optics for Laplace's Plasma Dynamics Analyzer* **(12+3)**

17.50-17.55 Alexey Koltsov, A. V. Ivantsov *Search of New Asteroids and TNO's Using Observations of the Short Period of Time* **(poster)**

17.55-18.00 Olexandr Baransky, K. I. Churyumov, V. O. Ponomarenko *Some Results of Investigation of Eighteen Fragments of Comet 73P Schwassmann-Wachmann 3 Nuclues* **(poster)**

18.00-18.05 Vasyl Ponomarenko, K. I. Churyumov, O. R. Baransky *Exploration of Bright Comet C/2007 N3 (Lulin) Observed in February 2009* **(poster)**

18.05-18.10 Vasyl Ponomarenko, K. I. Churyumov, O. R. Baransky, V. V. Kleshchonok, I. V. Lukyanyk, L. S. Chubko *Spectral Observations of Two Comets C/2006 W3 (Christensen) and 22P Kopff* **(poster)**

18.10-18.15 Oksana Tvorun, A. A. Berezhnoy *The Chemistry of Meteor Events on Mars* **(poster)**

18.15-18.20 Alex Tudorica, O. Vaduvescu, M. Birlan *EURONEAR – The First 200 NEA's Observed* **(poster)**

18.30-21.00 Excursion to the Main Astronomical Observatory of NAS of Ukraine

Tuesday, April, 27

Section 'Stellar Astrophysics'

09.30-09.45 Daria Teplykh, V. M. Malofeev, O. I. Malov *Pulsed Radio Emission from Two XDINS at Low Frequencies* **(12+3)**

09.45-10.00 Elena Nikitina, I. F. Malov *Estimations of Angles between Some Axes in Radio Pulsars from the Catalog at 1000 MHz* **(12+3)**

10.00-10.15 Maxim Kuznetsov *New Spectral Classification of Ultracool Dwarfs* **(12+3)**

10.15-10.30 Julia Solomennyk, B. Hnatyk, V. Marchenko *Analytical Description of Relativistic Shock Wave Dynamics in Stellar Envelopes* **(12+3)**

10.30-11.00 Tea-break

11.00-11.45 Nikolay Samus *Discovery and Study of New Variable Stars Using Digitized Plates from Moscow Stacks* **(invited)**

11.45-12.00 Wieslaw Zajiczek *Lie Symmetries of Relativistic Equations of Stellar Structure for Radiative Energy Transport* **(12+3)**

12.00-12.15 Dmitry Nasonov *Spectroscopy of Post-AGB Star IRAS01005+7910* **(12+3)**

12.15-12.30 Taisiya Kopytova, V. V. Krushinsky, E. Gorboskoy et al. *Polarimetry of GRB-091020 and GRB-091127* **(12+3)**

12.30-12.35 Svjatoslav Smerechynskyj, M. V. Vavrukh, N. L. Tyshko *Relation "Energy-Radius" in the Chandrasekhar Model and Degenerated Dwarfs Distribution by Radii* **(poster)**

12.35-12.40 Oksana Stelmakh, M. V. Vavrukh *Calculation of the Ionization Balance in the Photosphere of Stars with Allowance for Screening Interactions* **(poster)**

12.40-12.45 Andrew Simon *The First Spectra for the RX J0440.9+4431 from 2-m Terscol Telescope* **(poster)**

12.45-12.50 Andrew Simon, N. Metlova, V. Reshetnyk *Photometric Investigation of the 1H1935+55 and the Nearest Sky Field* **(poster)**

15.00-18.00 City tour (by bus)

18.00-22.00 Kyiv by night (walking tour)

Wednesday, April, 28

Section 'Extragalactic Astrophysics'

09.30-09.45 Salomé Pereira de Matos *Selection of Luminous Galaxies at the Edge of the Universe* **(12+3)**

09.45-10.00 Evgeniya Shaldenkova *Atomic Hydrogen Deficiency in Spiral Galaxies in Clusters* **(12+3)**

10.00-10.15 Vasiliy Vitrishchak, D. C. Gabuzda, I. N. Pashchenko *Circular Polarisation of AGNs on the Parsec VLBI Scales* **(12+3)**

10.15-10.30 **Ilya Pashchenko**, S. V. Pilipenko, V. M. Vitrishchak *Seyfert Galaxies and "Unified Scheme"* **(12+3)**

10.30-11.00 Tea-break

11.00-11.45 **Svitlana Zhukovska** *Dust Formation and Cycle in Galaxies* **(invited)**

11.45-12.00 **Maryna Mykhailova**, V. M. Kontorovich *Influence of Low-Frequency Quasar 3C 273 Radio Spectrum on X-ray Emission of Its Kiloparsec Jet* **(12+3)**

12.00-12.15 **Juan-Pablo Perez-Beaupuits**, M. Spaans, R. Gusten, K. Wada, H. W. W. Spoon *Structure and Dynamics of Galaxy Nuclei – Imaging and 3-D Modelling* **(12+3)**

12.15-12.30 **Daniela-Adriana Lacatus**, Madalina Badea, Alin Razvan Paraschiv *Peculiar Morphologies of Extended Extragalactic Radio Sources from Numerical Simulations* **(12+3)**

12.30-12.45 **Daria Dobrycheva**, O. Melnyk *Color Indices and Morphological Properties of Galaxies in Pairs* **(12+3)**

12.45-13.00 **Igor Zinchenko** *The Redshift Evolution of Oxygen and Nitrogen Abundances in Emission-Line SDSS Galaxies* **(12+3)**

13.00-13.05 **Kateryna Agienko** *WR-Galaxies in SDSS DR7* **(poster)**

13.05-13.10 **Denis Sokolov**, V. Marchenko, E. Sukach *The Structure of Jets in AGN from Radio and X-ray Data* **(poster)**

13.10-13.15 **Anna Saburova** *On the Possibility of Massive Discs in Low Surface Brightness Galaxies* **(poster)**

Section 'Gravitation & Cosmology'

14.00-14.45 **Yakiv Pavlenko** *Grants and Science in Europe and Ukraine* **(invited)**

14.45-15.00 **Dmytro Iakubovskyi** *Hunting for Dark Matter Particles* **(12+3)**

15.00-15.15 **David Sobral** *The Clustering and Environment of Star-Forming Galaxies at* $z = 0.84$*: the HiZELS-H*α *View* **(12+3)**

15.15-15.45 Tea-break

15.45-16.00 **Grygorii Polinovskyi**, G. Ivashchenko *Mean Transmitted Flux in the Ly*α *Forest from a Sample of 2QZ Quasars* **(12+3)**

16.00-16.15 **Olga Sergijenko**, B. Novosyadlyj *Perturbed Recombination and CMB Anisotropy: Linear Effect* **(12+3)**

16.15-16.30 **Olga Nasonova** *Blueshifted Galaxies in the Virgo Cluster* **(12+3)**

16.30-16.45 **Szymon Sikora** *Static, Spherically Symmetric Gravitational Lens Filled with Perfect Fluid* **(12+3)**

16.45-17.00 **Oleksandr Stefanyshyn** *Highly Relativistic Spinning Particle in a Gravitational Field* **(12+3)**

17.00-17.05 **Olga Sergijenko**, B. Novosyadlyj, S. Apunevych *Observational Constraints on Minimally Coupled Dark Energy Models: WMAP7 + SDSS DR7* **(poster)**

17.05-17.10 **Iurii Babyk**, O. Melnyk *X-ray Emission in Galaxy Clusters* **(poster)**

17.10-17.15 **Ganna Ivashchenko**, V. I. Zhdanov, A. V. Tugay *Correlation Function of Quasars in Real and Redshift Space from SDSS DR7* **(poster)**

17.15-17.20 **Sajad Abbar**, S. Rahvar *Observational Constraints on Cosmic Snap Parameters in a Kinematical Approach* **(poster)**

18.30-22.00 Organ hall / opera hall / etc.

Thurthday, April, 29

Section 'High-Energy Astrophysics'

09.30-09.45 **Ievgen Vovk**, A. Neronov *Evidence for Existence of Extragalactic Magnetic Fields in Excess of 10^{-16} G from Fermi Non-Detection of Distant TeV Blazars* **(12+3)**

09.45-10.00 **Margaryta Sobolenko**, D. Iakubovskyi *Observation of X-ray Spectral Hysteresis in the TeV BL Lacs Objects BL Lac and 1ES 1959+650* **(12+3)**

10.00-10.15 **Mykola Malygin**, D. Iakubovskyi *Search for Cyclotron Absorptions from Magnetars with XMM-Newton* **(12+3)**

10.15-10.30 **Taras Kuzyo**, O. Petruk *Magnetic Field Strength from Nonthermal Images of SN 1006* **(12+3)**

10.30-10.35 **Ekaterina Sukach**, V. Marchenko, D. Sokolov *Image and Spectral Analysis of Jets in AGN from X-ray Data* **(poster)**

10.35-10.40 **Olga Kosenok**, Marina Prus, Dmytro Doroshenko, V. Marchenko *Image and Spectral Analysis of Jets in AGN from X-ray Data* **(poster)**

10.40-11.10 Tea-break

Section 'Astroparticle Physics'

11.10-11.25 **Vasyl Beshley**, O. Petruk *Images of Supernova Remnants in Gamma-Rays due to Pion Decays* **(12+3)**

11.25-11.40 **Nataliia Kondrashova**, B. I. Hnatyk *Modeling of TeV Gamma-Ray Radiation from Supernova Remnant IC443* **(12+3)**

11.40-11.55 **Maria Trylis**, B. I. Hnatyk *Hadronic Model of TeV Gamma-Ray Radiation from Supernova Remnant Vela Jr.* **(12+3)**

11.55-12.10 **Volodymyr Masliukh**, B. I. Hnatyk *High-Energy Cosmic Rays from GRB Progenitors – Hypernovae* **(12+3)**

12.10-12.25 **Oleh Kobzar**, B. Hnatyk, V. Marchenko, T. Bogdan *Propagation of Different Components of Cosmic Rays in the Galactic Magnetic Fields* **(12+3)**

12.25-12.40 **Oleksandr Sushchov**, B. Hnatyk, O. Kobzar, V. Marchenko, T. Bogdan *The Influence of Extragalactic Magnetic Fields on the Propagation of Cosmic Rays* **(12+3)**

12.40-12.55 **Demid Pekur**, B. Hnatyk, V. Marchenko *Neutrinos from Relativistic Shock Break-Out at the Surface of Hypernova* **(12+3)**

12.55-13.00 **Tetyana Salivon**, D. Iakubovskyi *Modeling of Gamma-Ray Emission for Fermi/LAT Supernova Remnants* **(poster)**

Section 'Interstellar Medium'

14.00-14.45 **Alexey Berezhnoy** *Chemical Evolution of the Universe* **(invited)**

14.45-15.15 Tea-break

15.15-15.30 **Paweł Dobierski** *Interstellar Atomic Lines* **(12+3)**

15.30-15.45 **Yury Pakhomov**, N. N. Chugai, A. F. Iyudin *Stellar Spectroscopy Methods for Study of Supernova Remnants* **(12+3)**

15.45-16.00 **Ivan Litovchenko**, A. V. Alakoz, I. E. Val'tts *Mapping of Class I Methanol Emission in the Environment of Masers Identified with SNR and Discovery of New Masers* **(12+3)**

16.00-16.15 **Volodymyr Marchenko**, B. Hnatyk, D. Pekur *Observational Signatures of Relativistic Shock Break-Out at the Surface of Hypernova* **(12+3)**

16.15-16.30 **Nikolay Podorvanyuk** *Kinematics and Structure of Gas in Star-Formation Regions: Supernovae and Stellar Wind* **(12+3)**

16.30-16.45 **Roman Korytko**, B. Ya. Melekh, V. V. Golovaty *Redetermination of the Oxygen Abundance in Orion Nebula* **(12+3)**

16.45-16.50 **Ruslana Kozel**, B. Ya. Melekh, I. O. Koshmak *Multicomponent Photoionization Modelling of Envelopes with Complicated Structure of Stellar Wind Bubble Surrounding Sturburst Region* **(poster)**

16.50-16.55 **Davit Sargsyan**, T. A. Movsessian *Morphological Study of Cometary Nebulas* **(poster)**

18.30-22.00 Conference dinner

Friday, April, 30

Section 'Solar Physics'

09.30-09.45 **Sarah Jabbari**, H. Safari *The Slow Mode Oscillations of Solar Coronal Loops* **(12+3)**

09.45-10.00 **Anastasiya Boiko**, V. N. Mel'nik, A. A. Konovalenko et al. *Frequency Drift Rate of Powerful Decameter Type III Bursts* **(12+3)**

10.00-10.15 **Olena Andriets**, V. G. Lozitsky *Magnetic Fields Evolution in the Weak Solar Flares* **(12+3)**

10.15-10.20 **Olexandra Baran** *Structure of the Convective Flows of Real Solar Granulation* **(poster)**

10.20-10.25 **Anton Prihodko** *Determination of the Chromospheric and Photospheric Matter Motion Velocity during a Solar Flare* **(poster)**

10.25-10.30 **Antonina Klyueva**, V. G. Lozitsky *Intriguing Zeeman Splitting of FeI 6094.419 Line in a Sunspot: Violation of ls-Coupling or Superstrong Magnetic Fields?* **(poster)**

10.30-10.35 Olga Botygina, V. G. Lozitsky *Magnetic Field in a Solar Prominence Measured in D3 HeI Line* **(poster)**

10.35-11.05 Tea-break

11.05-11.50 Klim Churyumov *Space Mission "Rosetta" and Its Main Target – Comet 67P* **(invited)**

Section 'Positional Astronomy and Astronomical Equipment'

11.50-12.05 Lyudmila Berdina, A. A. Minakov *"Generalized" Method of the Phase Screen for Medium Inhomogeneities of Different Spatial Scale* **(12+3)**

12.05-12.20 Ksenia Suchomska *First Observations with a New Echelle Spectrograph QSI 532s+* **(12+3)**

12.20-12.35 Anton Pomazan, A. V. Ivantsov, L. A. Gudkova *Automation of Telescope Time Scheduling* **(12+3)**

12.35-12.50 Boris Safonov *Lucky Image Performance Simulation on the Basis of Optical Turbulence Data Obtained on Shatjatmaz* **(12+3)**

12.50-13.05 Vitaliy Zhaborovskyy, V. Ya. Choliy *Kyivgeodinamic++: Software Package for Processing Satellite Laser Ranging Date* **(12+3)**

13.05-13.10 Vitaliy Zhaborovskyy, V. Ya. Choliy *Determination of Reference Frames Deflections from Optical Observations of GNSS Satellites* **(poster)**

13.10-13.15 Ivan Syniavskyi, A. P. Vidmachenko, Yu. S. Ivanov, O. O. Monsar, M. G. Sosonkin *The Equipment for Polarimetric Observations of Astronomical Objects* **(poster)**

13.15-13.20 Mislav Balokovic, D. Vinkovic *Using General Purpose Graphical Processing Units for Applications in Astronomy and Astrophysics* **(poster)**

13.20-13.25 Serhiy Pokhvala, B. Yu. Zhilyaev *Determination of the Sky Background in Kiev with Digital Camera Canon 350D* **(poster)**

13.25-13.30 Anastasiia Zolotukhina *Creation IR Database* **(poster)**

Section 'Space Geophysics & Physics of the Near Space'

14.30-15.15 Yuri Khotyaintsev *Particle Acceleration during Solar Flares and Magnetospheric Substorms* **(invited)**

15.15-15.30 Grzegorz Wiktorowicz, E. Słomińska, H. Rothkaehl, A. Krankowski *Main Ionospheric Trough – Dynamic Structures of Ionospere* **(12+3)**

15.30-15.45 Allawi Habeeb, A. Al-Sawad *Observation of the Location of CMEs Associated with ∼30–100 MeV SEP Events* **(12+3)**

15.45-16.00 Mariia Soloviova, I. O. Anisimov *Modes' Concurrence in Transversely Restricted Electron Beam Injected into Homogeneous Plasma* **(12+3)**

16.00-16.15 Daria Velykanets, S. M. Levitsky *Longitudinal Acceleration of Plasma Electrons during the Beam-Plasma Interaction* **(12+3)**

16.15-16.30 **Tetiana Skorokhod**, G. Lizunov *Morphology Structure of Atmosphere Gravity Waves According to the in Situ Satellite Measurements* **(12+3)**

16.30-17.00 **Łukasz Gruszka**, E. Wnuk, I. Wytrzyszczak, J. Gołębiewska, A. Rożek *Predictions of Space Debris* **(12+3)**

17.00-17.05 **Artur Durajski**, M. Szczęśniak, R. Szczęśniak, M. W. Jarosik *The Secondary Radiation of the Earth Ionosphere* **(poster)**

17.05-17.10 **Polya Dobreva**, D. K. Koitchev, V. I. Keremidarska, M. D. Kartalev *Numerical Modeling of the Magnetosphere with Data Based Internal Magnetic Field and Arbitrary Magnetopause* **(poster)**

17.10-17.15 **Dmytro Salyuk**, O. Agapitov *Nonlinear Anticyclone Structures in the Earth Atmosphere* **(poster)**

17.15-17.20 **Andriy Voshchepynec**, O. Agapitov *Dynamic Magnetic Structures near the Quasi-Parallel Earth Bow Shock* **(poster)**

17.20-17.25 **Valentyn Bovchaliuk**, V. M. Reshetnyk *Coronal Mass Ejections Dynamics on the Small Heliocentric Distances* **(poster)**

17.25-18.15 Poster Section + Tea-break

18.15-18.30 Official closure

Saturday, May, 1

10.00-14.00 Excursions to Museum of Folk Architecture and Life of Ukraine / Kyiv-Pechersk Lavra / M. M. Gryshko National Botanic Garden

Observations and Research of Minor Solar System Bodies

Sergey Karashevich[1], Iraida Verestchagina[2], Eugen Sokov[2], Vyacheslav Slesarenko[1], A. V. Devyatkin[1]

[1]*Saint-Petersburg State University, Saint-Petersburg, Russia*
[2]*Main Astronomical Observatory of RAS, Pulkovo, Russia*

beenom@gmail.com

The Laboratory of Astrometrical Observations has two full automatic telescopes: mirror astrograph ZA-320M, located in Pulkovo observatory, and MTM-500M, located in Pulkovo Mount Astronomical Station near Kislovodsk, North Kaukaz. These telescopes have been used to observations of minor Solar System bodies such as asteroids and comets. Special attention was payed to binary asteroids and Near-Earth Objects (including Potentially Hazardous Asteroids). In this work we have presented results of researching of several binary asteroids and near-Earth asteroid 2008 TC3 which had impacted with Earth at the territory of the North Sudan in October 6-7, 2008.

Design Process of Ion Optics for Laplace's Plasma Dynamics Analyzer

Remigiusz Pospieszyński

Swedish Institute of Space Physics, Kiruna, Sweden

dywanik@gmail.com

Plasma Dynamics Analyzer (PDA) is an instrument that is being designed for the upcoming joint NASA/ESA mission Laplace (The Europa Jupiter System Mission). The instrument will be placed on-board the probe and will reach its target in the late 2020s. The design process and further optimization of the PDA's ion optics is being presented. The optical part will be combined with time-of-flight (TOF) section during more advanced design. The ion optics consists of number of electrodes with potentials from 0 V to 5000 V of which two geometries have been built and investigated in detail. Currently the focus shifts to the second geometry which design is less complicated and uses less space.

Search of New Asteroids and TNO's Using Observations of the Short Period of Time

Alexey Koltsov, A. V. Ivantsov

Research Institute "Mykolaiv Astronomical Observatory", Mykolaiv, Ukraine

alexkoltsov@mao.nikolaev.ua

Search of new asteroids and TNO's can be executed from comparison either of direct images (matching, and than making differences for each pixel), got in a short interval of time or objects lists containing measured coordinates. The last method as compared to the first one assumes simple automation of search of new objects, and also classification of objects using a reference catalogue. At short exposures (less than 10 seconds), typical for the modern CCD-observations, the track from a moving asteroid or TNO can be insignificant, and the object looks star-shaped. For the interval of time in 1 minute between observations, the asteroids of the Main belt are displaced for $0''.18 - 0''.38$, and TNO's – $1''.2$, the displacement of the lasts caused mainly by the orbital motion of the Earth. These values can be used for identifying moving objects. If the object coordinates are different less than $1''.2$ per minute, then the moving object can be identified as an asteroid or TNO on different images. It is

clear that the motion of TNO's is caused, mainly, by orbital motion of the Earth. Objects, not present analogues on other images, are written down in the total. Comparison of the measured coordinates of objects is made using various ε-distances. These objects can be either new objects or bugs. The problems of search using this algorithm are discussed.

Some Results of Investigation of Eighteen Fragments of Comet 73P Schwassmann-Wachmann 3 Nuclues

Olexandr Baransky[1], K. I. Churyumov[1], V. O. Ponomarenko[2]

[1]*Astronomical Observatory of National Taras Shevchenko University, Kyiv, Ukraine*
[2]*National Taras Shevchenko University of Kyiv, Kyiv, Ukraine*

Barka.08@rambler.ru

Some preliminary results of observations and investigation of 18 secondary fragments of splitting primary nucleus of short period comet 73P Schwassmann - Wachmann 3 which were observed in May – June 2009 with the help of the 0.7-m reflector of Astronomical observatory of Kyiv University Kiev comet station - MPC 585 are presented. Astrometric observations of all cometary secondary fragments were used for improvement of their orbital elements and calculation of more precise ephemerides for observations of these fragments in the nearest comet apparition in 2011. We observed in real time, the outburst of brightness and the fragmentation of the secondary nucleus B in two new secondary fragments B1 and B2 which had at first the same magnitudes. Also we observed fragmentation of secondary nuclei G, H, M with formation of new fragments which passed the stage of their fast disintegration. Exploration of splitting of cometary nuclei is very important for best understanding of internal structure and chemical and mineralogical composition of cometary nucleus. Various physical mechanisms of splitting of cometary nuclei are discussed.

Exploration of Bright Comet C/2007 N3 (Lulin) Observed in February 2009

Vasyl Ponomarenko[1], K. I. Churyumov[2], O. R. Baransky[2]

[1]*National Taras Shevchenko University of Kyiv, Kyiv, Ukraine*
[2]*Astronomical Observatory of National Taras Shevchenko University, Kyiv, Ukraine*

klivch@mail.ru

Results of study of seven middle-resolution optical spectra of comet 2007 N3 (Lulin) observed in Feb. 2009 with the help of the 2-m Zeiss reflector and echelle-spectrograph of the High-mountain astronomical station of Institute of Astronomy of Russian Academy of Sciences and Main Astronomical Observatory of National Academy of Sciences of Ukraine at Peak Terskol are presented. Four spectra of comet 2006 N3 (Lulin) were obtained with expositions by duration 40 min every spectrum on Feb. 23-24, 2009 and two spectra with the expositions 60 min and one spectrum with the exposition 40 min were obtained on Feb. 24-25, 2009. The comet was at heliocentric distance 1.4 A.U. and geocentric one 0.4 A.U. and had 4.5 mag. The detailed identification of the spectral emission lines in spectra was made. Physical parameters of the neutral coma of comet (velocities of gas expansion, lives times of some molecules and other parameters) were calculated.

Spectral Observations of Two Comets C/2006 W3 (Christensen) and 22P Kopff