



25th Young Scientists' Conference on Astronomy and Space Physics

April 23–28, 2018

Kyiv, Ukraine

PROGRAMME

Registration, poster section, morning coffee and tea-breaks will take place in the poster-hall

Monday, April, 23

09.00-13.00 - Registration

13.00-13.30 - Official opening

Section 'Solar Physics & Heliosphere'

Chair: Maksym Mohorian

Room 200

13.30-14.15 V. G. Lozitsky (*Astronomical Observatory of the Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Essential features of solar activity: new data and some problems (**invited**)

14.15-14.30 Andrii Prysiaznyi, M. I. Stodilka (*Astronomical Observatory of Ivan Franko National University of Lviv, Lviv, Ukraine*) The influence of magnetic field on photospheric convection in solar facular region (**12+3**)

14.230-14.35 Oleksandra Baran, M. I. Stodilka (*Astronomical Observatory of Ivan Franko National University of Lviv, Lviv, Ukraine*) Role of the pressure variations in the formation of granular structures in the solar photosphere (**poster**)

14.35-14.40 Anna Pankivska, S. Osipov (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Spectral analysis and comparison of solar activity indices (**poster**)

18.30-21.00 Excursion to the Main Astronomical Observatory of the National Academy of Sciences of Ukraine

Tuesday, April, 24

Section ‘Extragalactic Astrophysics & Cosmology’

Chair: Anton Dmytriiev
Room 103

09.00-10.00 morning coffee

10.00-10.45 Sergei Parnovsky (*Astronomical Observatory of Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Dark side of the Universe (**invited**)

10.45-11.00 Anatoliy Tugay (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Space telescopes (**12+3**)

11.00-11.15 Vladislav Khramtsov, V. S. Akhmetov (*Institute of Astronomy, V. N. Karazin Kharkiv National University, Kharkiv, Ukraine*) Classification model to identify extragalactic objects within WISExPanSTARRS1 catalogue (**12+3**)

11.15-11.30 Iurii Babyk (*Main Astronomical Observatory of the National Academy of Science of Ukraine, Kyiv, Ukraine; Department of Physics and Astronomy, University of Waterloo, Waterloo, Canada*) The distribution of cold molecular gas in groups and early-type galaxies (**12+3**)

11.30-11.45 Andrii Maliuk, I. A. Zinchenko (*Main Astronomical Observatory of National Academy of Sciences of Ukraine, Kyiv, Ukraine*) Investigation of the chemical composition of interacting galaxies from the MaNGA review (**12+3**)

11.45-12.00 Olha Ponomarenko, A. V. Tugay (*Natural Scientific Lyceum №145, Kyiv, Ukraine*) New galaxy cluster around NGC 3216 (**12+3**)

12.00-12.15 Vadym Voytsekhovskiy, A. V. Tugay (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Two-dimensional simulation of galaxy distribution with Gaussian random fields (**12+3**)

12.15-12.30 Olena Kompaniets, P. Berczik, V. Marchenko, M. Sobolenko, E. Fedorova (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Dynamical Evolution of Supermassive Binary Black Hole at the Center of NGC 6240 Based on Chandra Observation (**12+3**)

12.30-12.35 Inna Izviekova, A. O. Simon (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Optical monitoring of the BL Lac object OJ 287 at the Lisnyky observational station from 2010 till 2018 (**poster**)

13.00-14.00 lunch

Section ‘High Energy Astrophysics’

Chair: Anton Dmytriiev
Room 103

14.00-14.15 Anton Dmytriiev, H. Sol, A. Zech, O. Le Blanc, J-M. Huet, L. Dangeon, J. Gironnet (*Laboratory Universe and Theories, Paris Observatory, Meudon, France*) Simulation of the optical performance of the Gamma-ray Cherenkov Telescope (GCT) and its prototype using ROBAST ray tracing software (**12+3**)

- 14.15-14.30** Roman Gnatyk (*Astronomical Observatory of Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Gamma-ray emission of the Supernova remnant associated with the magnetar SGR1900+14 (**12+3**)
- 14.30-14.45** Kateryna Vynokurova, B. I. Hnatyk (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) TeV gamma-ray emission from the Vela Supernova Remnant (**12+3**)
- 14.45-15.00** Pavlo Plotko, B. I. Hnatyk (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Vela Supernova Remnant and its Pulsar Wind Nebula: Physical Characteristics and Radio Emission (**12+3**)
- 15.00-15.15** Taras Kuzyo, O. Petruk (*Pidstryhach Institute for Applied Problems of Mechanics and Mathematics, Lviv, Ukraine*) MHD Simulations of Early SNR Evolution (**12+3**)
- 15.15-15.30** Mariana Patrii, O. Petruk, T. Kuzyo (*Ivan Franko National University of Lviv, Lviv, Ukraine*) MHD simulations of interaction of the strong shock with accretion disk (**12+3**)
- 15.30-15.45** Vadym Voytsekhovskiy, B. Hnatyk, Yu. Kudrya (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Magnetic Fields in the Local Filament and Their Influence on the Propagation of Ultra High Energy Cosmic Rays (**12+3**)
- 15.45-15.50** Valeriia Slipak, V. Aushev (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Prospects for neutrino studies of supernovae in DUNE experiment (**poster**)
- 15.50-15.55** Lidiia Zadorozhna (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Repeated bursts of FRB 121102 as a radiation from cusps on superconducting cosmic string loop (**poster**)
- 16.00-20.00** City tour (walking tour)

Wednesday, April, 25

Section ‘Solar System & Exoplanets’

Chair: Olena Shubina
Room 103

09.00-10.00 morning coffee

- 10.00-10.45** Oleksiy Golubov (*Institute of Astronomy of V. N. Karazin Kharkiv National University, School of Physics and Technology of V. N. Karazin Kharkiv National University, Kharkiv, Ukraine*) Origin and evolution of asteroids (**invited**)
- 10.45-11.00** Tetiana Hromakina, D. Perna, N. Bott, E. Mazzotta Epifani, E. Dotto, A. Dore-soundiram (*V. N. Karazin Kharkiv National University, Kharkiv, Ukraine*) Surface properties of Jupiter Trojans (624) Hektor and (911) Agamemnon (**12+3**)
- 11.00-11.15** Olena Shubina, O. Ivanova, V. Rozenbush, N. Kiselev, V. Afanasiev, N. Borisov (*Main Astronomical Observatory of National Academy of Sciences of Ukraine, Kyiv, Ukraine*) Optical spectra of the short-period comet 2P/Encke in 2003 and 2017 appearances (**12+3**)
- 11.15-11.30** Daniella Glezina, I. G. Slyusarev (*V. N. Karazin Kharkiv National University, Kharkiv, Ukraine*) Results of observation of 4 exoplanets in search of inflated atmosphere evidence (**12+3**)
- 11.30-11.45** Daniella Glezina, I. G. Slyusarev (*V. N. Karazin Kharkiv National University, Kharkiv, Ukraine*) Towards the search of the difference in physical and dynamical properties between the L4 and L5 swarms of Jupiter Trojans (**12+3**)

- 11.45-11.50** Volodymyr Troianskyi, A. O. Simon, V. I. Kashuba (*Astronomical Observatory, Odessa I. I. Mechnikov National University, Odessa, Ukraine*) Discovery of the small Solar system bodies with OMT-800 and AZT-8 telescope (**poster**)
- 11.50-11.55** Yuliia Kalinina, V. M. Reshetnyk (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Rotational periods of the selected near-Earth asteroids (**poster**)
- 11.55-12.00** Elena Musiichuk, S. A. Borysenko (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Heliocentric distribution of activity for the main-belt and quasi-Hilda comets during of last 20 years (**poster**)
- 12.00-13.00** tea-break
- 13.30-14.30** lunch
- 18.00-22.00** Organ hall / opera hall / etc.

Thursday, April, 26

Section ‘Stellar Astrophysics and Interstellar Medium’

Chair: Maksym Mohorian
Room 103

- 09.00-10.00** morning coffee
- 10.00-10.15** Vitalii Breus, I. L. Andronov, P. Dubovsky, K. Petrik, S. Zola, T. Hegedus (*Odessa National Maritime University, Odessa, Ukraine*) Photometric analysis and improved parameters of newly discovered short-period binaries (**12+3**)
- 10.15-10.30** Jaime Andrés Rosales Guzmán, R. E. Mennickent, A. A. Senhadji (*University of Concepción, Concepción, Chile*) Evolutionary process of the Double Periodic Variable: V495 Centauri (**12+3**)
- 10.30-10.45** Artem Dmytrenko, V. S. Akhmetov (*V. N. Karazin Kharkiv National University, Kharkiv, Ukraine*) The search of the globular clusters by catalogue data (**12+3**)
- 10.45-11.00** Khrystyna Kobyrnka (*Ivan Franko National University of Lviv, Lviv, Ukraine*) On the possible constraints on dark energy using compact objects (**12+3**)
- 11.00-11.15** Jaime Andrés Rosales Guzmán, R. E. Mennickent, G. Djurasevic, I. Araya, M. Curé (*University of Concepción, Concepción, Chile*) Analyzing the long term variability of the Double Periodic Variable HD 50526 (**12+3**)
- 11.15-11.30** Maksym Mohorian, Y. V. Pavlenko, A. Suarez Mascareno, R. Rebolo, N. Lodieu, V. J. S. Bejar, J. I. Gonzalez Hernandez (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Spectroscopic manifestations of activity processes in the atmosphere of Proxima Centauri (**12+3**)
- 11.30-11.45** Dmytro Melekh, J. Krelowski, S. Smerechynskyi, B. Melekh (*Ivan Franko National University of Lviv, Lviv, Ukraine*) Variability of interstellar absorption lines and emission line [O III] 5007 Å in direction to η Carinae association (**12+3**)
- 11.45-12.00** Fedir Karasenko, B. Ya. Melekh (*Ivan Franko National University of Lviv, Lviv, Ukraine*) Search of the optimal photoionization models of nebular environments using Markov chains method (**12+3**)
- 12.00-12.30** tea-break

- 12.30-12.45** Yevhen Vasylykivskyi, S. V. Stepkin, O. O. Konovalenko (*Institute of Radio Astronomy of the National Academy of Sciences of Ukraine, Kharkiv, Ukraine*) New objects and methods of the low-frequency radio spectroscopy using decametric radio recombination lines (**12+3**)
- 12.45-13.00** Ihor Koshmak, B. Ya. Melekh (*Ivan Franko National University of Lviv, Lviv, Ukraine*) The primordial helium abundance determined using multicomponent photoionization modelling (**12+3**)
- 13.00-13.15** Oleh Buhajenko, B. Ya. Melekh (*Ivan Franko National University of Lviv, Lviv, Ukraine*) On the reliability of the diagnostic methods in the investigation of the inhomogeneous nebular component of dwarf star-forming galaxies (**12+3**)
- 13.15-13.30** Myroslav Kasheba, B. Ya. Melekh (*Ivan Franko National University of Lviv, Lviv, Ukraine*) Determining the distribution of the nebular matter in PNe envelopes using their emission line spectra (**12+3**)
- 13.30-13.35** Katerina Bovkun, A. O. Simon, V. M. Reshetnyk, O. R. Baransky (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Photometric system for telescope AZT-8 (**poster**)
- 13.35-13.40** Yana Markus, V. M. Reshetnyk (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Data processing of Gaia alerts (**poster**)
- 13.40-13.45** Sergii Pokhvala, B. E. Zhilyaev (*Main Astronomical Observatory of the National Academy of Sciences of Ukraine, Kyiv, Ukraine*) Studying the spectroscopic short time-scale variability of the hot supergiant ζ Orionis (**poster**)
- 13.45-13.50** Volodymyr Vasylenko, A. O. Simon, N. V. Metlova (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Optical observations of the 1H1936+541 from 2008 till 2018 (**poster**)
- 14.00-15.00** lunch
- 17.45-20.00** Excursion to Pinchuk Art Center

Friday, April, 27

Section ‘Atmospheric studies and space geophysics’

Chair: Andrii Bovchaliuk
Room 103

09.00-10.00 morning coffee

- 10.00-10.45** Gennadi Milinevsky (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Ukraine Aerosol-UA space mission for atmospheric aerosol study: tasks, state-of-art and prospects (**invited**)
- 10.45-11.00** Andrew Prokhorenkov, L. Kozak, E. Kronberg, E. Grigorenko, A. T. Y. Lui (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Power spectrum manifestation of Kelvin-Helmholtz instability by Cluster II mission measurements (**12+3**)
- 11.00-11.15** Elena Belyaeva, V. Ya. Choliy (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) On building the targets of any possible shapes in DDscat.C++ software (**12+3**)
- 11.15-11.30** Bohdan Petrenko, L. Kozak, E. Kronberg, E. Grigorenko, A. Lui (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Turbulence spectra in region of magnetic dipolarization (**12+3**)

11.30-11.45 Maksym Vasiuta, M. M. Medvedskyy (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) In-sky safety system using ADS-B radar receiver (**12+3**)

11.45-11.50 Orkhan Hajiyev, S. R. Hajiyeva, M. V. Frontasyeva, A. I. Madadzada, Z. T. Veliyeva, M. S. Shvetsova, A. A. Samadova (*Baku State University, Baku, Azerbaijan*) Active biomonitoring of air pollution in Baku, the capital of Azerbaijan (**poster**)

11.50-11.55 Sergii Cheremnykh (*Space Research Institute National Academy of Sciences of Ukraine and State Space Agency of Ukraine, Kyiv, Ukraine*) Kelvin-Helmholtz instability at the boundary of the geomagnetic tail (**poster**)

11.55-12.40 **Poster section + tea-break**

12.40-13.00 **Official closure**

13.00-14.00 **lunch**

Saturday, April, 28

09.00-13.00 Museum of Folk Architecture and Life of Ukraine