



26th Young Scientists' Conference on Astronomy and Space Physics

April 22–27, 2019

Kyiv, Ukraine

PROGRAMME

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

Monday, April, 22

09.00-14.30 - Registration

14.30-15.00 - Official opening

Section 'Solar Physics & Heliosphere'

15.00-15.45 Natalia G. Shchukina (*Main Astronomical Observatory of NAS of Ukraine, Kyiv, Ukraine*) The New Generation of Solar Telescopes (**invited**)

15.45-16.00 Andrii Prysiashnyi (*Astronomical Observatory of Ivan Franko National University of Lviv, Lviv, Ukraine*) The features of photospheric jets of the quiet solar atmosphere (**12+3**)

16.00-16.15 Valeriia Liakh, M. Luna (*Instituto de Astrofísica de Canarias, Santa Cruz de Tenerife, Spain*) Large-amplitude oscillations in solar prominences in 2.5D models (**12+3**)

16.15-16.30 Beata Zjawin, P. Ablewski, K. Beloy, S. Bilicki, M. Boberet al. (*Institute of Physics, Faculty of Physics, Astronomy and Informatics, Nicolaus Copernicus University, Toruń, Poland*) First Earth-scale quantum sensor network: dark matter searches with the use of optical atomic clocks (**12+3**)

16.30-16.45 Volodymyr Savchenko (*Chemin d'Ecogia 16, Geneve, Switzerland*) Elusive short and energetic multi-messenger transients **(12+3)**

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

Tuesday, April, 23

Section 'Atmospheric studies and space geophysics'

09.00-10.00 morning coffee

10.00-10.45 Gennadi Milinevsky (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Atmospheric research in Ukraine: ground-based and satellite measurements **(invited)**

10.45-11.00 Dmytro Vlasov, A. S. Parnowski (*Space Research Institute, Kyiv, Ukraine*) Modeling of Local Magnetic Field Prediction **(12+3)**

11.00-11.15 Yuliia Yukhymchuk, G. Milinevsky, V. Bovchaliuk (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Synergy of lidar and sunphotometer observations over Kyiv, Ukraine **(12+3)**

11.15-11.30 Oksana Ivaniha, A. R. Klekociuk, G. P. Milinevsky (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Polar tropopause seasonal behavior by the PACT data **(12+3)**

11.30-11.45 Denys Hladikov, V. Choliy (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Comparison of major aerosol pollutants over Europe and China area by GEOS-Chem model data **(12+3)**

11.45-12.00 Andrii Hulin, Yu. Rapoport, V. Grimalsky (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Algorithms and modeling of propagation of low-frequency electromagnetic wave in the earth-ionosphere waveguide **(12+3)**

12.00-12.15 Bohdan Petrenko, L. V. Kozak, E. Kronberg, E. Grigorenko, A. Lui (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Dispersion relation concept to turbulent medium of the geomagnetic tail **(12+3)**

12.15-12.30 Sergei Petrishchevskii, Yu. Rapoport, V. Grimalsky (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Theoretical models of ionospheric perturbations and interaction in the system "Earth-atmosphere-ionosphere" **(12+3)**

12.30-12.45 Kateryna Reka, L. V. Kozak, B. Petrenko, A. T. Y. Lui, E. Kronberg (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Alteration of pressures in the tail of the Earth's magnetosphere during the substorm initiation **(12+3)**

12.45-13.00 Miriam Kosik, K. Słowik (*Institute of Physics, Faculty of Physics, Astronomy and Informatics, Nicolaus Copernicus University, Toruń, Poland*) Controlling properties of light-matter interaction as a potential tool for astronomy **(12+3)**

13.00-14.00 lunch

14.00-20.00 City tour (walking tour)

Wednesday, April, 24

Section ‘Stellar Astrophysics and Interstellar Medium’

09.00-10.00 morning coffee

10.00-10.15 Vitalii Breus, I. L. Andronov, P. Dubovsky, K. Petrik, T. Hegedus (*Odessa National Maritime University, Odessa, Ukraine*) Change of the spin period and possible third body in the intermediate polar FO Aqr **(12+3)**

10.15-10.30 Maksym Mohorian, Ya. V. Pavlenko (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Proxima Centauri emission lines as activity indicators **(12+3)**

10.30-10.45 Sergii Pokhvala (*Main Astronomical Observatory of NAS of Ukraine, Kyiv, Ukraine*) Spectroscopic Short time-scale variability of O-B stars **(12+3)**

10.45-11.00 Viktor Kudak, Š. Parimucha (*Institute of Physics, Faculty of Science, Pavol Jozef Šafárik University, Košice, Slovak Republic*) Influence of starspots on determination of 3rd body orbital parameters in eclipsing binary systems **(12+3)**

11.00-11.15 Miroslav Fedurco, Š. Parimucha (*Institute of physics, Faculty of Science, Pavol Jozef Šafárik University in Košice, Košice, Slovak Republic*) Double eclipsing binary system KIC 3832716 **(12+3)**

11.15-12.00 tea-break

12.00-12.15 Paweł Szewczyk (*Warsaw University Astronomical Observatory, Warsaw, Poland*) Exploring solution space of differentially rotating neutron stars **(12+3)**

12.15-12.30 Agnieszka Mirocha, A. Karska, L. E. Kristensen, M. Gładkowski, M. Żółtowski (*Jagiellonian University, Krakow, Poland*) Molecular emission around low-mass protostars in the Serpens Main with IRAM 30m **(12+3)**

12.30-12.45 Bartosz Etmanski, M. R. Schmidt, R. Szczerba (*Nicolaus Copernicus Astronomical Centre of the Polish Academy of Sciences, Warsaw, Poland*) Ammonia in circumstellar environment around C-rich stars **(12+3)**

12.45-13.00 Yevhen Vasylykivskyi, S. V. Stepkin, A. A. Konovalenko (*Institute of Radio Astronomy of the National Academy of Sciences of Ukraine, Kharkiv, Ukraine*) Detection of extremely high excited states of the interstellar Rydberg carbon atoms **(12+3)**

13.00-13.15 Myroslav Kasheba, B. Ya. Melekh (*Ivan Franko National University of Lviv, Lviv, Ukraine*) Redetermination of chemical abundances in planetary nebulae using recent atomic data **(12+3)**

13.15-13.30 Mateusz Zieliński, Ł. Wyrzykowski, M. Gromadzki, P. Zieliński, K. Kruszyńska, K. Rybicki (*Warsaw University Astronomical Observatory, Warsaw, Poland*) Microlensed source spectral analysis **(12+3)**

13.30-13.35 Yuliia Kalinina, V. M. Reshetnyk (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Gaia Alerts in X-ray and radio ranges **(poster)**

13.35-13.40 Yana Markus, V. M. Reshetnyk, V. Godunova (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Photometric data processing of Gaia alerts **(poster)**

13.40-13.45 Alisa Shchurova, A. Simon, V. Vasylenko, V. Godunova, I. Izviekova, A. Baransky (*Astronomical Institute of the Slovak Academy of Sciences, Tatranská Lomnica, Slovak Republic*) Optical follow-up of the CV candidate system Gaia18aes **(poster)**

14.00-15.00 lunch

18.00-22.00 Organ hall / opera hall / etc.

Thursday, April, 25

Section ‘Extragalactic Astrophysics & Cosmology’

09.00-10.00 morning coffee

10.00-10.45 Giuseppe Longo (*Department of Physics “E. Pancini”, University Federico II, Napoli, Italy*) Astrophysical big data: an overview of machine learning problems and methods (**invited**)

10.45-11.00 Ihor Koshmak, B. Ya. Melekh (*Ivan Franko National University of Lviv, Lviv, Ukraine*) Photoionization modeling of the H II regions surrounding star-forming regions within metallicity range $z = 0.003 - 0.012$ (**12+3**)

11.00-11.15 Oleh Buhajenko, B. Ya. Melekh (*Ivan Franko National University of Lviv, Lviv, Ukraine*) Detailed calculation of diffuse ionizing radiation transfer in nebular component of star-forming dwarf galaxies (**12+3**)

11.15-11.30 Illya Bilinsky, P. Berczik, A. Just, B. Shukirgaliyev, D. Ivanov (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Investigation of Galactic star clusters mass loss processes using the star by star large scale direct N-body simulations (**12+3**)

11.30-11.45 Dmytro Orikhovskiy, V. A. Ponomarenko, A. O. Simon, V. V. Vasylenko (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Results of monitoring of AGN MRK 501 in optical range (**12+3**)

11.45-12.00 tea break

12.00-12.15 Olena Torbaniuk, M. Paolillo, G. Longo, M. Delli Veneri (*Department of Physics “E. Pancini”, University Federico II, Napoli, Italy*) Identification of candidate AGNs in multiband digital sky surveys (**12+3**)

12.15-12.30 Zofia Kaczmarek (*Warsaw University Astronomical Observatory, Warsaw, Poland*) Lensing by intermediate-mass black holes (**12+3**)

12.30-12.35 Emine Gülmez (*Yeditepe University, Atasehir/Istanbul, Turkey*) XMM-Newton Observation of Galaxy Cluster Abell 262 (**poster**)

12.35-14.00 lunch

Section ‘High Energy Astrophysics’

14.00-14.45 Artem Bohdan, M. Pohl, J. Niemiec (*Deutsches Elektronen-Synchrotron (DESY), Zeuthen, Germany*) Production of non-thermal electrons at nonrelativistic quasi-perpendicular shocks of young supernova remnants (**invited**)

14.45-15.00 Mariana Patrii, O. Petruk, T. Kuzyo (*Ivan Franko National University of Lviv, Lviv, Ukraine*) Evolution of the structure of Tycho SNR as from observations in the X-ray range (**12+3**)

15.00-15.15 Roman Gnatyk (*Astronomical Observatory of Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Magnetar SGR 1900+14 as a source of high energy and very high energy gamma-rays (**12+3**)

15.15-15.30 Anton Dmytriiev, H. Sol, A. Zech (*Laboratory Universe and Theories, Paris Observatory, Paris, France*) A new code for modeling variable multi-wavelength emission during blazar flares (**12+3**)

15.30-15.45 Olena Kompaniiets, A. A. Vasylenko (*Main Astronomical Observatory of NAS of Ukraine, Kyiv, Ukraine*) Compton-thin absorber in type 2 Seyfert Markarian 417 observed by NuSTAR and Swift/BAT (**12+3**)

- 15.45-16.00** Vadym Voytsekhovskiy, R. B. Gnatyk (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Search for Sources of Extremely High Energy Cosmic Rays in the Local Universe (**12+3**)
- 16.00-16.05** Anatolii Vasylenko (*Main astronomical observatory of NAS of Ukraine, Kyiv, Ukraine*) The obscured active nucleus of NGC 7172 as seen by NuSTAR (**poster**)
- 16.05-16.10** Pavlo Plotko, B. I. Hnatyk (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Vela pulsar wind nebula and Vela Wings: physical characteristics, radio and gamma emission (**poster**)

Friday, April, 26

Section ‘Solar System & Exoplanets’

09.00-10.00 morning coffee

- 10.00-10.15** Olena Shubina, N. Kiselev, V. Rozenbush, O. Ivanova, V. Afanasiev, V. Kleshchonok (*Main Astronomical Observatory of NAS of Ukraine, Kyiv, Ukraine*) Effect of contamination by gas emissions for comet polarization (**12+3**)
- 10.15-10.30** Oleksandra Lukina, A. R. Baransky (*Astronomical Observatory of Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Astrometry and photometry of transneptunian objects at Kyiv comet station (**12+3**)
- 10.30-10.45** Jakub Morawski, T. Trifonov (*Astronomical Observatory, University of Warsaw, Warsaw, Poland*) Upsilon Andromedae revisited. Dynamical characterization and a fourth outer Jovian planet in the system (**12+3**)
- 10.45-11.00** Blanka Világos, B. Côtè, M. Lugaro (*Konkoly Observatory, Research Centre for Astronomy and Earth Sciences, Hungarian Academy of Sciences, Budapest, Hungary*) The isolation time of the Solar System (**12+3**)
- 11.00-11.15** Yurii Pekarskyi, V. M. Reshetnyk (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) Scattering of electromagnetic waves on complex dust aggregates (**12+3**)
- 11.15-12.15 Poster section + tea-break**
- 12.15-12.45 Official closure**
- 13.00-14.00 lunch**

Saturday, April, 27

09.00-13.00 Museum of Folk Architecture and Life of Ukraine