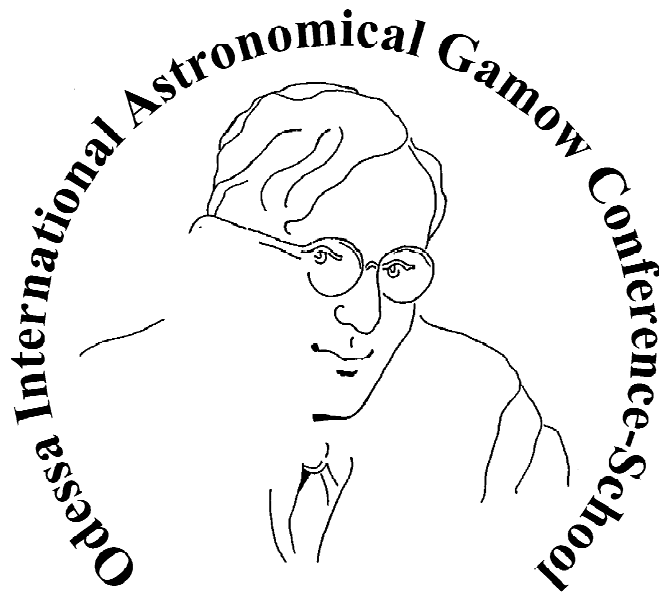


**22-nd Gamow International Astronomical Conference
"ASTRONOMY AND BEYOND: ASTROPHYSICS,
COSMOLOGY AND GRAVITATION, ASTROPARTICLE
PHYSICS, RADIO ASTRONOMY AND ASTROBIOLOGY"**



PROGRAM

August 22-26, 2022
Odessa, Ukraine

SCIENTIFIC ORGANIZING COMMITTEE:

Chair of SOC: **V.M.Shulga**

Vice-chair: **M.I.Ryabov**

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LOCAL ORGANIZING COMMITTEE:

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Vice-Chairs: **M.I.Ryabov**

Secretary: **A.A.Pilipenko**

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22-nd Gamow International Astronomical Conference

**"ASTRONOMY AND BEYOND: ASTROPHYSICS, COSMOLOGY AND GRAVITATION,
ASTROPARTICLE PHYSICS, RADIOASTRONOMY AND ASTROBIOLOGY"**

PROGRAM

Англійською та українською мовами

**22-nd Gamow International Astronomical Conference
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 PHYSICS, RADIOASTRONOMY AND ASTROBIOLOGY”**

August 22-26, 2022, Odesa, Ukraine

PROGRAM

SCHEDULE OF THE PLENARY AND SECTION SESSIONS

Monday, 22.08.2022

10:00 – 13:30 **Memorial session**

Tuesday, 23.08.2022

10:00 – 15:00 **Plenary session**

16:00 – 18:00 **UAA**

Section sessions (August 22–26):

Data	22.08	23.08	24.08	25.08	26.08
Section 1. Cosmology, gravitation, astroparticle physics, high energy physics	14.00–18.20				
Section 2. Astrophysics	14.00–19.00				
Section 3. Solar System and Space Environment			10.00 – 17.00		
Section 4. Sun, Solar activity and Astrobiology				09.30–13.40	
Section 5. Radio astronomy					09.30–13.30
Section 6. Biology Section				10.00–17.00	

SECTIONS:

- 1. Cosmology, Gravitation, Astroparticle Physics, High Energy Physics** (*Convener – A.I.Zhuk*) **August 22**
- 2. Astrophysics** (*Conveners – I.L.Andronov, T.V.Mishenina*) **August 22**
- 3. Solar System and Space Environment** (*Convener – N.I.Koshkin*) **August 24**
- 4. Sun, Solar Activity, Solar-terrestrial Relations and Astrobiology** (*Convener – M.I.Ryabov*) **August 25**
- 5. Radio astronomy** (*Convener – O.M.Ulyanov*) **August 26**
- 6. Biology section** (*Convener – S.V.Chebotar*) **August 25**

Monday, 22.08.2022

10:00 – 10:30 OPENING OF THE CONFERENCE AND GREETING TALKS

Convener – V.M.Shulga

Greetings of the Rector of the Odessa I.I.Mechnikov National University *V.I.Truba*

Greetings of the President of the Ukrainian Astronomical Association *Ya.S.Yatskiv*

Greetings of the Chairman of the Scientific Council "Astronomy and Astrophysics" of the Department of Physics and Astronomy of the NAS of Ukraine and SOC *V.M.Shulga*

10:30 – 13:30 MEMORIAL SESSION

- Invited report - I.L.Andronov* (Odessa National Maritime University, Ukraine) **PROF. VLADIMIR PLATONOVICH TSESEVICH (1907-1983): SCIENCE, EDUCATION, ORGANIZATION OF SCIENCE, PUBLIC OUTREACH – 30 min**
- Invited report - A.Zhuk* (Odessa I.I.Mechnikov National University, Ukraine and Center for Advanced Systems Understanding (CASUS), Görlitz, Germany) **A FASCINATING STORY OF THE DISCOVERY OF A NON-STATIONARY UNIVERSE: FROM A GREAT "BLUNDER" TO EXPERIMENTAL CONFIRMATION** (*Laureate of the Gamow Prize of the NASU, 2022*) – 30 min
- Invited report - M.Capaccioli* (Naples University Federico II, Physics Dept, Italy) **ASTRONOMY AND COSMOLOGY IN DANTE ALIGHIERI – 30 min**
- Invited report - T.V.Mishenina* (Odessa I.I.Mechnikov National University, Ukraine) **FROM SPECTROSCOPY TO THE CHEMICAL EVOLUTION OF THE MILKY WAY. PART 1. TO MARK THE 150th ANNIVERSARY OF THE ODESA ASTRONOMICAL OBSERVATORY. – 30 min**
- Invited report - M.I.Ryabov* (Radio Astronomical Institute NAS, Ukraine) **ODESSA ASTRONOMICAL SOCIETY AND GAMOW'S CONFERENCE – 20 min**
- Invited report - S.Mitton* (St Edmund's College, University of Cambridge, England) **LIFE AND SCIENTIFIC ACTIVITY OF GEORGE GAMOW – 30 min**

Tuesday, 23.08.2022

10:00 – 15:00 PLENARY SESSION (Report – 30 min)

Convener – O.M.Ulyanov

1. *Invited report - Yu.V.Shtanov* (Institute Theoretical Physics NAS, Ukraine) DARK MATTER AS A MANIFESTATION OF GRAVITY (*Laureate of the Gamow Prize of the NASU, 2022*)
2. *Invited report - F.M.Zerbi* (Istituto Nazionale di Astrofisica (INAF) National Headquarters Roma, Italy) THE MAIN OBJECTIVES OF GROUND BASED OBSERVATIONAL ASTRONOMY FOR THE NEXT DECADE (*Laureate of the Gamow Medal, 2022*)
3. *Invited report - President UAA Ya.S.Yatskiv* (Main Astronomical Observatory NAS of Ukraine) CURRENT STATUS OF SPACE SCIENCES IN UKRAINE
4. *Invited report - B.S.Novosyadlyj, Yu.Kulinich, V.M.Shulga* (Ivan Franko National University of Lviv, Ukraine; Jilin University, China; Institute of Radio Astronomy of NASU, Ukraine) THE FIRST MOLECULES IN THE HALOS OF DARK AGES AND COSMIC DAWN: CONTENT AND LUMINESCENCE

12:00 – 12:20 Coffee break

5. *Invited report - N.Shchukina* (Main Astronomical Observatory NAS of Ukraine) SPACE AND GROUND-BASED STUDIES OF THE SUN
6. *Invited report - E.Bannikova* (INAF – Capodimonte Astronomical Observatory, Naples, Italy; Institute of Radio Astronomy, NAS of Ukraine) DUSTY TORI IN ACTIVE GALACTIC NUCLEI
7. *Invited report - I.L.Andronov, L.L.Chinarova, L.S.Kudashkina* (Odessa National Maritime University, Ukraine) ASTROINFORMATICS: WAVELET ANALYSIS OF IRREGULARLY SPACED DATA
8. *Invited report - M.Eingorn, M.Brilenkov, E.Canay* (North Carolina Central University, USA; Institute of Theoretical Astrophysics, University of Oslo, Norway; Istanbul Technical University, Turkey) COSMOLOGICAL PERTURBATIONS ENGENDERED BY DISCRETE RELATIVISTIC SPECIES

SECTION SESSIONS

COSMOLOGY, GRAVITATION, HIGH ENERGY PHYSICS, ASTROPARTICLE PHYSICS

Monday, 22.08.2022

14:00 – 18:20 Section session

Convener – *A.I.Zhuk*

1. *O.S.Stashko, V.I.Zhdanov* CIRCULAR ORBITS AROUND STATIC SPHERICALLY SYMMETRIC CONFIGURATIONS WITH SCALAR FIELDS IN GENERAL RELATIVITY
2. *R.Durrer, S.Parnovsky* GROWTH OF GALAXIES BY DARK MATTER PARTICLE CAPTURE
3. *M.Brilenkov, M.Eingorn, N.O'Briant, K.Arzu, A.McLaughlin II, E.Canay, A.Zhuk* CHIMNEY AND SLAB TOPOLOGIES: GRAVITATIONAL INTERACTIONS IN LATTICE UNIVERSE
4. *E.Yilmaz, M.Eingorn, J.M.Metcalf, B.O'Briant, A.K.E.Diouf, F.L. Statum, M.Brilenkov, A.Zhuk* COSMIC SCREENING APPROACH IN FULLY PERIODIC BOUNDARIES
5. *M.Bondar, A.Tugay, L.Zadorozhna* GRAPHITE UNIVERSE MODEL
6. *M.Tsizh* CORRELATIONS BETWEEN NETWORK METRICS AND PHYSICAL PROPERTIES OF HALOS IN COSMIC WEB IN COSMOLOGICAL SIMULATIONS
7. *S.Skolota, E.Bannikova* GRAVITATIONAL PROPERTIES OF OUTER POTENTIAL OF A TORUS WITH AN ELLIPTICAL CROSS-SECTION

16:20 – 16:40 *Coffee break*

8. *Y.V.Taistra, V.O.Pelykh, A.M.Kuz* NEW APPROACH TO DECOUPLING OF THE MAXWELL EQUATIONS
9. *Z.Pysarevskyi, E.Panko, S.Yemelianov* THE INVESTIGATION OF THE SUBSTRUCTURES IN THE ISOLATED GALAXY CLUSTERS
10. *Yu.I.Fedorov, Yu.L.Kolesnyk* GALACTIC COSMIC RAY TRANSPORT IN HELIOSPHERE IN THE SMALL ANISOTROPY APPROXIMATION
11. *O.Kompaniets, Yu.Babyk, I.B.Vavilova* EXTENDED SOFT X-RAY EMISSION IN THE 2MIG ISOLATED GALAXIES WITH AGN
12. *V.D.Gladush* SPHERICALLY SYMMETRIC SYSTEM OF GRAVITATIONAL AND ELECTROMAGNETIC FIELDS AND THE STRUCTURE OF ITS CONFIGURATION SPACE

ASTROPHYSICS

(stellar atmospheres, interacting binary systems, variable stars)

Monday, 22.08.2022

14:00 – 19:00 Section session

Convener – *T.V.Mishenina*

1. *V.V.Butkovskaya, S.I.Plachinda* ON MAGNETIC FIELD OF THE HOT EVOLVED STAR HR 3042
2. *D.N.Doikov* THE POSITRON Γ -SPECTROSCOPY OF SYMBIOTIC SYSTEMS
3. *M.Doikov* DUAL HARD AND OPTICAL RADIATION DETECTORS FOR FAST NUCLEAR PROCESSES
4. *V.Yushchenko, V.Gopka, A.Shavrina, Ja.Pavlenko, A.Shereta, A.Yushchenko* RADIOACTIVE ELEMENTS IN STELLAR ATMOSPHERES OF CEPHEIDS. ACTINIUM.
5. *Z.A.Samedov, G.M.Hajiyeva, Z.F.Aliyeva, A.B.Hasanova, S.Sh.Rajabova* FUNDAMENTAL PARAMETERS OF A SPECTRAL CLASS GIANTS STARS
6. *B.N.Rustamov, Kh.M.Mikailov, K.I.Alishева, S.O.Mammadova, V.I.Aliyeva* SPECTRAL OBSERVATIONS OF THE HERBIG Be STAR HD 53367
7. *S.I.Denyshchenko, P.N.Fedorov, V.S.Akhmetov, A.B.Velichko* DETECTION OF SPIRAL STRUCTURES OF THE MILKY WAY GALAXY USING KINEMATIC ANALYSIS
8. *V.Akhmetov, P.Fedorov, A.Velichko, A.Dmytrenko, S.Denyshchenko* MAPPING THE KINEMATIC PARAMETERS OF THE GALAXY FROM THE GAIA EDR3 DATA
9. *M.Kasheba, B.Ya.Melekh, A.Vilkha* PHOTOIONIZATION ANALYSIS OF THE HYDRODYNAMICAL MODEL SOF PLANETARY NEBULAE EVOLUTION
10. *Vasylenko M.Yu., Elyiv A.A., Diachenko N.M., Vavilova I.B., Dobrycheva D.V., Melnyk O.V.* PHOTOMETRY REDSHIFT RECONSTRUCTION USING MACHINE LEARNING TECNICUE FOR THE SDSS GALAXIES AT $0.2 < Z < 1.0$

16:30 – 16:45 *Coffee break*

Convener – *I.L.Andronov*

11. *A.Abdulkarimova, O.Maryeva, S.Karpov* DISCOVERY OF A NEW [WR] STAR J040901
12. *V.Breus, I.L.Andronov, P.Dubovsky, K.Petrik* VARIABILITY OF THE INTERMEDIATE POLAR RX J2133.7+5107
13. *L.S.Kudashkina, I.L.Andronov* RT VIR –A SEMIREGULAR STAR WITH MASER EMISSION: MATHEMATICAL MODELLING OF OPTICAL VARIABILITY
14. *I.L.Andronov, V.V.Breus, S.V.Kolesnikov, S.Zola* BH Lyn and DW UMa - MATHEMATICAL MODELLING OF THE ECLIPSING CATAclysmic VARIABLES WITH A PRECESSION OF THE ACCRETION DISK
15. *A.S.Nodyarov, A.S. Miroshnichenko, S.A.Khokhlov, N. Manset* REFINED PHYSICAL PROPERTIES OF THE HD 327083 BINARY SYSTEM
16. *M.Pyatnytskyy* PERIOD CHANGES OF V965 CEPHEI: A SIGN OF THE BINARY SYSTEM?
17. *M.Lobodenko, Ya.Pavlenko, I.Kulyk, A.Nahurna, M.Solomakha, O.Baransky* COMPARATIVE ANALYSIS OF OBSERVATION OF THE SELECTED EXOPLANETS TRANSITS OBTAINED AT THE KYIV COMET STATION, WITH THE LIGHT CURVES OF THEIR PARENT STARS, FROM THE TESS AND THE KEPLER SPACE TELESCOPE DATABASE
18. *V.Andruk, L.Pakuliak, V.Akhmetov, S.Shatokhina, O.Yizhakevych* CATALOG OF V-MAGNITUDES OF STARS AND GALAXIES FROM DIGITIZED IMAGES OF TAUTENBURG 2-M SCHMIDT TELESCOPE GLASS ARCHIVE
19. *I.Koshmak* IONIZATION-CORRECTION FACTORS OBTAINED BY PHOTOIONIZATION MODELING OF HII REGIONS SURROUNDING CONTINUOUS STAR-FORMING REGIONS

SOLAR SYSTEM AND SPACE ENVIRONMENT

Wednesday, 24.08.2022

10:00 – 17:00 Section session

Convener – *N.I.Koshkin*

1. *A.Golubaev, A.Mozgova* THE DATABASE OF METEOR BODIES ACCORDING TO OBSERVATIONS IN 2019-2021 WITH THE AUTOMATIC VIDEO AND SPECTRAL METEOR PATROL OF V.N. KARAZIN KHARKIV NATIONAL UNIVERSITY
2. *Ye.Surkov, V.Kaydash, Yu.Shkuratov, V.Korokhin* REMOTE SENSING OF LUNAR SPINEL DEPOSITS ON THE ARITARCHUS CRATER AND THE COBRA HEAD USING M3 SPECTRAL DATA
3. *S.Velichko, V.Korokhin, V.Kaydash, Yu.Shkuratov* PHASE DEPENDENCE OF ALBEDO OF LUNAR IRREGULAR MARE PATCH IN A OBTAINED FROM LROC NAC DATA
4. *I.Slyusarev, I.Belska* M-TYPE DOMINATED MAIN BELT ASTEROID FAMILIES
5. *V.G.Shevchenko, I.N.Belskaya, I.G.Slyusarev, O.I.Mikhalchenko, Yu.N.Krugly, V.G.Chiorny, D.F.Lupishko, D.Oszkiewicz, T.Kwiatkowski, M.Gritsevich, K.Muinonen, A.Penttilä* KHARKIV DATABASE OF ASTEROID ABSOLUTE MAGNITUDES
6. *O.Kozhukhov, N.Maigurova, A.Pomazan* TIME AND GEOLOCATION UNCERTAINTIES AS COMPONENTS OF THE ACCURACY OF NEAS GROUND-BASED OBSERVATIONS
7. *V.Troianskyi* DART: DOUBLE ASTEROID REDIRECTION TEST - OBSERVATION CAMPAIGN
8. *H.Okhotko, V.Troianskyi, O.Bazyey* CHARACTERIZATION OF "HOT POPULATION" OBJECTS IN THE KUIPER BELT

13:00 – 14:00 Lunch break

Convener – *V.V.Troianskyi*

9. *O.Bazyey, N.Bazyey* CLOSE ENCOUNTERS OF STARS ACCORDING TO THE GAIA EDR3 CATALOG
10. *I.Luk'yanyk, O.Ivanova, V.Rosenbush, V.Kleshchonok, L.Kolokolova* PHOTOMETRIC, POLARIMETRIC, AND SPECTRAL OBSERVATIONS OF COMET C/2014 B1 (SCHWARTZ) WITH PERIHELION DISTANCE 9.56 AU
11. *O.Shubina, V.Kleshchonok, O.Ivanova, I.Luk'yanyk, A.Baransky* MONITORING OBSERVATIONS OF COMET 29P/SCHWASSMANN-WACHMANN 1 DURING 2012-2019
12. *A.Voitko, O.Ivanova* PHOTOMETRY OF COMETS C/2013 V2 (BORISOV) AND C/2017 T2 (PANSTARRS)
13. *S.Korzhasin, V.Troianskyi, V.Kashuba* PHOTOMETRY OF COMET 29P/SCHWASSMANN-WACHMANN 1
14. *L.Shakun, Y.Kozyryev* THE ORBITAL CALCULATION CORE SERVICE AS PART OF AN UKRAINIAN SPACE SURVEILLANCE AND TRACKING SYSTEM
15. *V.I.Kudak, V.M.Perig* PROCESSING OF ARTIFICIAL SATELLITES PHOTOMETRY OBTAINED BY THE QHY-174M-GPS CAMERA AND SYSTEMATIZATION OF THE DATA
16. *N.Koshkin, L.Shakun, S.Melikyants, E.Korobeinikova, S.Strakhova, A.Ryabov, S.Terpan* DETERMINATION OF SATELLITE ROTATION BASED ON PHOTOMETRY BY A WIDE NETWORK OF OBSERVATORIES
17. *P.P.Sukhov, V.P.Yepishev, K.P.Sukhov, A.L.Pavlovskyi, S.A.Mamrai* A PHOTOMETRIC METHOD FOR DETECTING DEGRADATION IN THE SATELLITE SURFACE OPTICAL PROPERTIES
18. *P.Sukhov, V.Epishev, K.Sukhov*. ON THE POSSIBILITY OF DETERMINING THE SATELLITE'S EXTERNAL PAYLOAD FROM LIGHT CURVES
19. *B.Zhilyaev, V.Petukhov, V.Reshetnyk* UNIDENTIFIED AERIAL PHENOMENA I. OBSERVATIONS OF EVENTS

SUN, SOLAR ACTIVITY, SOLAR-TERRESTRIAL RELATIONS AND ASTROBIOLOGY

Thursday, 25.08.2022

09:30 – 13:40 Section session (Report – 20 min)

Convener – *M.I.Ryabov*

1. *N.Shchukina* SOLAR ACTIVITY AND SUN-EARTH CONNECTION
2. *V.M.Efimenko, V.G.Loizitsky* SOLAR CYCLE 25 FORECAST: AVERAGE CYCLE WITHOUT SIGNS OF MAUNDER-TYPE SECULAR MINIMUM
3. *R.Kostik* RESULTS OF OBSERVATIONS OF WAVE MOTIONS IN THE SOLAR FACULA
4. *S.Osipov, N.Shchukina, R.Kostik, M.Pishkalo* LONG-TERM MONITORING OF THE QUIET SUN
5. *I.I.Yakovkin, V.G.Loizitsky* INDICATIONS OF SUPERSTRONG MAGNETIC FIELDS IN A LIMB SOLAR FLARE AND AN ACTIVE PROMINENCE FROM SPECTRO-POLARIMETRIC OBSERVATIONS IN HA AND D3 LINES

11:30 – 12:00 *Coffee break*

6. *M.Ryabov, M.Orlyuk, A.Sukharev, V.Bezrukovs, A.Klokovs, L.Sobitnyak, Yu.Sumaruk, V.Galanin, Ye.Strakhov* THE PHENOMENON OF REGIONAL SPACE WEATHER EFFECTS IN LATVIA AND UKRAINE – PERSPECTIVE PRACTICAL APPLICATIONS
7. *A.Sukharev, M.Ryabov, M.Orlyuk, V.Bezrukovs, A.Romenets, L.Sobitnyak, V.Galanin, Ye.Strakhov, V.Derevyagin, J.Steinbergs, K.Skirmante* SOLAR AND GEOMAGNETIC ACTIVITY SPECIFICS IN ODESSA MAGNETIC ANOMALY ZONE –FIRST RESULTS MAGNETOMETRIC OBSERVATIONS
8. *V.H.Komendant, N.I.Koshkin, M.I.Ryabov, A.L.Sukharev* MULTIPLE CORRELATION MODELS OF THE DEPENDENCE OF ISS DRAG ON THE STATE OF SOLAR AND GEOMAGNETIC ACTIVITY IN 23-24 CYCLES
9. *V.S.Martyniuk, O.M.Gromozova, Yu.V.Tseysler, I.O.Gretsky, A.Yu.Artemenko* TIME DYNAMICS OF BACKGROUND LUMINESCENCE SPECTRA OF PHOTOBACTERIUM PHOSPHOREUM

