The 21-th Gamow conference-school is devoted to:

– the 150th anniversary of the Astronomical Observatory of Odessa I.I.Mechnikov National University;
– the 90th anniversary of the registration by K.Jansky of cosmic radio emission and of the beginning of radio astronomy;
– the 60th anniversary of the beginning of the Era of space flights;
– the 125th anniversary of the Odessa astronomer V.S.Zhardetsky;
– the memory of Prof. A.D.Chernin, the member of the SOC and the participant of all Gamow conferences-schools in Odessa.
SCIENTIFIC ORGANIZING COMMITTEE:

Chair of SOC: V.M.Shulga (IRA NASU, Kharkov, Ukraine, shulga@rian.kharkov.ua)

Vice-chair: M.I.Ryabov (IRA NASU, Odessa, Ukraine, ryabov-uran@ukr.net)

Secretary: S.M.Melikyants (AO ONU, Odessa, Ukraine, sedamelikk@gmail.com)

Members of SOC: V.M.Adamyan (OUN, Odessa), S.M.Andrievsky (OUN, Odessa),
I.L.Andronov (ONMU, Odessa), Felix Aharonian (Germany), N.G.Bochkarev (SAI
MSU, Moscow), M.Capaccioli (Naples University, Italy), A.M.Cherepashchuk (SAI
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K.Georgieva (Sofia, Bulgaria), A.A.Konovalenko (IRA NASU), N.I.Koshkin (OUN,
Odessa), I.Kudzej (Humenne, Slovakia), T.V.Mishenina (OUN, Odessa),
V.N.Obridiok (IZMIRAN, Moscow), Tsvi Piran (Izrael), I.Shmelyd (VIRAC, Latvia),
S.Silich (Puebla, Mexico), A.V.Stepanov (Pulkovo Observatory RAS, Saint-
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Kyiv), Y.S.Yatskiv (President of UAA, Kyiv), V.V.Zakharenko (IRA NASU,
Kharkov), A.I.Zhuk (OUN, Odessa).

LOCAL ORGANIZING COMMITTEE

Chair of LOC: V.I.Truba (Rector of ONU)

Vice-Chairs of LOC: M.I.Ryabov (ryabov-uran@ukr.net),
V.P.Olyeynik (olyeyyp@onu.edu.ua)

Secretary: A.A.Pilipenko (plpnko@ukr.net)

Members of LOC: A.Yu.Burgazli, A.V.Chopovsky, A.V.Dragunova, T.I.Kabanova,
V.G.Komendant, N.I.Koshkin, L.S.Kudashkina, S.M.Melikyants, B.A.Murnikov,

SCIENTIFIC TOPICS:
Cosmology, gravitation, astroparticle physics, high energy physics, astrophysics,
plasma astrophysics, radioastronomy, solar activity, solar system, astrobiology.
SECTIONS:
1. Cosmology, Gravitation, Astroparticle Physics, High Energy Physics, Cosmochronophysics
   (Convener - A.I.Zhuk)  August, 17
   Subsection «Astroinformatics» (Convener – I.B.Vavilova)  August, 18
3. Radioastronomy (Conveners – O.M.Ulyanov, O.A.Litvinenko)  August, 19
4. Sun, Solar Activity, Solar-terrestrial Relations and Astrobiology
   (Convener – M.I.Ryabov)  August, 19
5. Solar System and Space Environment
   (Convener – N.I.Koshkin)  August, 18
6. Biology Section (Convener – S.V.Chebotar)  August, 17

SCHEDULE OF THE PLENARY AND SECTION SESSIONS

Memorial and Plenary sessions:
16 August
10.00 – 14.00  Conference Hall – “Grand Physical Auditorium”

Session of Ukrainian Astronomical Association:
15.00 – 17.00  Conference Hall – “Grand Physical Auditorium”

Section sessions (17–20 August):
Conference Hall (Auditoriums № 16, 27 Faculty of Biology)

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EVENTS

Monday, 16.08.2021
09.00 – 10.00 REGISTRATION OF PARTICIPANTS (Entrance the Conference Hall “Grand Physical Auditorium”)
10.00 – 14.00 OPENING OF THE CONFERENCE, MEMORIAL REPORTS AND PLENARY TALKS (Conference Hall “Grand Physical Auditorium”)
14.10 Photographing of participants after plenary sessions
14.30 – 15.30 Lunch
16.00 – 17.30 SESSION OF UKRAINIAN ASTRONOMICAL ASSOCIATION
19.00 – 21.00 Sea walk and Welcome Party buffet on a boat

Tuesday, 17.08.2021
09.30 – 14.00 SECTION SESSION (Faculty of Biology)

Wednesday, 18.08.2021
09.30 – 14.00 SECTION SESSION (Faculty of Biology)
18.00 – 19.00 Visit to the University’s Astronomical Observatory and Planetarium
19.00 – 21.00 Conference Dinner

Thursday, 19.08.2021
09.30 – 14.30 SECTION SESSION (Faculty of Biology)
13.00 – 13.30 CLOSING OF THE CONFERENCE (Faculty of Biology)

Friday, 20.08.2021
Excursions day
PROGRAM

Monday, 16.08.2021
09:00 – 10:00 Registration of participants (Conference Hall Grand physical Auditorium)
10:00 – 10:40 OPENING OF THE CONFERENCE, MEMORIAL REPORTS AND GREETING TALKS (Conference Hall “Grand physical Auditorium”)

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 “Astronomy today in Ukraine”
Greetings of the SOC V.M.Shulga

10:40 – 11:30 MEMORIAL SESSION (Conference Hall “Grand physical Auditorium”)
Karetnikov V.G. ASTRONOMY IN ODESSA I.I.MECHNIKOV NATIONAL UNIVERSITY – 150 YEARS OF HISTORY – 35 min
Andrievsky S.M. TODAY AND FUTURE ODESSA ASTRONOMICAL OBSERVATORY – 10 min

11:35 – 12:00 Coffee break

12:00 – 13:40 PLENARY SESSION (Conference Hall “Grand Physical Auditorium”)
Convener – S.M.Andrievsky
Fedorov O.P. SPACE OBSERVATIONS AND SUSTAINABLE DEVELOPMENT OF UKRAINE – 25 min
Pankov A.A. UPDATED CONSTRAINTS ON HEAVY RESONANCES USING THE RUN 2 ATLAS DATA AT LHC – 25 min
Eingorn M., Yükselci A.E., Zhuk A. COSMOLOGICAL SIMULATION CODE COMPETITION: SCREENING VS. GEOLUTION – 25 min
Andronov I.L., Andrych K.D., Breus V.V., Chinarova L.L., Kolesnikov S.V., Kudashkina L.S., Marsakova V.I., Tvardovskyi D.E. MATEMATICAL MODELING OF PHYSICAL VARIABILITY OF STARS – 25 min

13:40- 14.10 Presentation new projects and initiatives:
Ulyanov O.M., Sukharev A., Bezrukovs V., Ryabov M., Zakharenko V., Konovalenko O., Orbidans A., Ozhiniskiy V., Vlasenko V., Bakun D. STUDY OF VARIABILITY PROPERTIES OF PECULIAR EXTRAGALACTIC RADIO SOURCES WITH FEATURES OF DOUBLE NUCLEI – 10 min
Ryabov M.I., Bezrukovs V., Orlyuk M.I., Sukharev A.L., Sobitnyak L.I., Galanin V.V., Ivantyshyn O.L. “STRUVE ARC” AS INDICATOR OF THE MANIFESTATION OF SOLAR AND GEOMAGNETIC ACTIVITY – 10 min
Ryabov M.I. ESTABLISHMENT OF THE INTERNATIONAL DAY OF THE COMET – 10 min

14:10 – 14:30 CONFERENCE PHOTO (after the Plenary session)
14:30 – 15:30 LUNCH
16:00 – 18:00 SESSION OF UKRAINIAN ASTRONOMICAL ASSOCIATION
19:00 – 20:30 Sea walk and Welcome Party buffet on a boat

Thursday, 19.08.2021
13:00 – 13:30 CLOSING OF THE CONFERENCE (Faculty of Biology)
SECTION SESSIONS
COSMOLOGY, GRAVITATION,
HIGH ENERGY PHYSICS, ASTROPARTICLE PHYSICS

Tuesday, 17.08.2021

09:30 – 11:30  Section session (Auditorium №27  Faculty of Biology)
Convener – V.P. Olyeynik

1. Novosyadlyj B., Kulinich Yu., Shulga V. DISTORTION OF COSMIC MICROWAVE BACKGROUND IN THE DARK AGES AND COSMIC DAWN EPOCHS
2. Kulinich Yu., Novosyadlyj B. HOW THE PRIMORDIAL MAGNETIC FIELD AFFECTS THE PRIMORDIAL CHEMISTRY AND FIRST MOLECULES EMISSIVITY
3. Sergijenko O., Neomenko R. DARK-AGE 21 CM POWER SPECTRUM IN COSMOLOGICAL MODELS WITH INTERACTING DARK MATTER AND DARK ENERGY
4. Tsizh M., Zhenylenko V. MODELING COSMIC VOIDS PROFILES IN MULTIDARK COSMOLOGICAL SIMULATION
5. Tugay A., Shevchenko S., Zadorozhna L. TOPOLOGY OF LARGE SCALE STRUCTURE OF THE UNIVERSE
7. Panko E., Yemelianov S. NEARBY GALAXY CLUSTERS: EVOLUTIONARY CHANGES
8. Kompaniets O., Vasyleenko A. X-RAY PROPERTIES OF NGC 3081 OBTAINED FROM CHANDRA OBSERVATIONAL DATA

11:30 – 12:00  Coffee break

12:00 – 14:00  Section session (Auditorium №27  Faculty of Biology)
Convener – A.I. Zhuk

9. Pelykh V., Shulga V., Taistra Y. ON ANGULAR DISTRIBUTION OF ELECTROMAGNETIC RADIATION FROM KERR BLACK HOLE
10. Minaiev P., Skalozub V. THE SCAN OF PARAMETRIC SPACE FOR H2HDM WITH DIFFERENT EXPERIMENTAL CONDITIONS
11. Burdyuzha V. THE MAIN REACTIONS IN THE EARLY UNIVERSE
12. Sokoliuk O., Baransky A., Paliathanasis A. ON THE EXISTENCE AND STABILITY OF TRAVERSABLE WORMHOLE SOLUTIONS IN MODIFIED THEORIES OF GRAVITY
14. Olyeynik V.P. ON SCHOUTEN’S GEOMETRIES IN METRIC GRAVITATION THEORIES
15. Yushkevych T., Chudak N., Potiienko O., Sharph I. LAPLACE METHOD FOR SINGLE-LOOP DIAGRAMS OF ELASTIC PROTON SCATTERING
16. Ryazantsev G., Vysotskii V., Lavrenchenko G., Nedovesov S., Ryazantsev D. OBTAINING NEUTRON MATTER AND HYPERHEAVY NUCLEI. POSSIBLE INSTRUMENTAL APPROACH

POSTERS

ASTROPHYSICS
(stellar atmospheres, interacting binary systems, variable stars)

Wednesday, 18.08.2021

09:30 – 11:30  Section session (Auditorium №16  Faculty of Biology)
Convener – T.V.Mishenina

1. Doikov D.N., Yuschchenko A.V. THE γ-RAY’s DIAGNOSTICS BY THERMONUCLEAR FLARES IN POLARS WITH MASSIVE WHITE DWARFS

11:00 – 11:30  Coffee break

11:30 – 13:00  Section session (Auditorium №16  Faculty of Biology)
Convener – I.L.Andronov

8. Nahurna A., Solomakha M., Lobodenko M., Baransky O. INVESTIGATION OF PLANETARY SYSTEMS
10. Hontarenko M., Marsakova V. PERIOD CHANGES OF FOUR CEPHEID VARIABLES
13. Kudashkina L.S., Andronov I.L. MATHEMATICAL MODELING OF PHYSICAL VARIABILITY OF SEMI-REGULAR STAR RX BOO WITH MASER EMISSION
SUBSECTION “ASTROINFORMATICS”

Wednesday, 18.08.2021

13:00 – 14:15 Section session (Auditorium №16 Faculty of Biology)

Convener – I.B. Vavilova


2. Kuznyetsova Y., Krushevska V., Romanyuk Y., Andreev M. RESEARCHES OF HOST STAR CHROMOSPHERIC ACTIVITY VARIATIONS IN EXOPLANET SYSTEMS HD 189733 AND HD 68988


4. Shatokhina S., Kazantseva L. ANALYSIS AND REPROCESSING OF EARLY KYIV OBSERVATIONS OF ASTEROIDS WITH MODERN REFERENCE CATALOGUES


7. Andruk V., Pakuliak L. FIRST RESULTS OF PROCESSING DIGITIZED V-PLATES TAKEN WITH THE TAUTENBURG 2M SCHMIDT TELESCOPE
**SOLAR SYSTEM AND SPACE ENVIRONMENT**

**Wednesday, 18.08.2021**

**09:30 – 11:30** Section session *(Auditorium №27 Faculty of Biology)*

**Convener – O.M. Kozhukhov**

1. Kasianchuk A., Baransky O., Korniychuk P., Semenchuk N. ASTROMETRY AND PHOTOMETRY OBSERVATIONS OF THE TROJAN ASTEROID (624) HEKTOR IN LISNYKY
2. Luk’yanyk I., Baransky O., Solomakha M., Sokoliuk O. PHOTOMETRIC OBSERVATION OF COMET C/2017 K2 (PANSTARRS) WITH THE AZT-8 TELESCOPE AT OBSERVATION STATION LISNYKY
4. Maigurova Nadia, Pomazan Anton, Shulga Alexandr, Tang Zheng-Hong. RESULTS OF OBSERVATIONS OF NEW DISCOVERED NEAs DURING CLOSE APPROACH TO THE EARTH
5. Troianskyi V., Oszkiewicz D., Kankiewicz P. DYNAMICAL PROPERTIES OF BASALTIC ASTEROIDS OUTSIDE THE VESTA FAMILY
6. Vasylenko M., Povhyn Ya., Kulyk I., Shubina O., Dobrycheva D., Korsun P. THE ALGORITHM FOR AUTOMATIC IDENTIFICATION OF ASYMMETRIC TRANSITS IN THE TESS DATABASE
7. Zotov L., Bizouard Ch. SIMILAR OSCILLATIONS IN THE MARKOWITZ AND CHANDLER WOBBLES
8. Zhilyaev B.E., Petukhov V.N., Reshetnyk V.N., Vid’machenko A.P. COLORIMETRY OF METEORS

**11:30 – 12:00** Coffee break

**12:00 – 14:00** Section session *(Auditorium №27 Faculty of Biology)*

**Convener – I.V. Luk’yanyk**

10. Kaliuzhnyi M., Bushuev F., Kulichenko M., Shulga O. RESULTS OF CLARIFYING OF ORBITAL ELEMENTS OF LOW-ORBIT SATELLITES BY MODERNIZED DOPPLER STATION OF THE RI “MAO”
11. Kulichenko M., Kryuchkovskiy V., Maigurova N., Shulga O. ORBITAL ELEMENTS CATALOG OF GEO SATELLITES BASED ON OBSERVATIONS AT RI MAO IN 2020-2021
14. Shakun L.S., Kozhukhov O.M. THE ANALYSIS OF OPTICAL MEASUREMENTS EXCHANGE FORMATS IN THE SPACE SURVEILLANCE AND TRACKING DOMAIN
15. Koshkin N., Shakun L., Melikyants S., Korobeynikova E., Strakhova S., Romanyuk Ya., Ryabov A., Terpan S., Dragomiretsky V., Golubovskaya T. MULTI-SITE SIMULTANEOUS RSO PHOTOMETRY TO CHARACTERIZE THEIR ROTATION STATE
17. Podlesnyak S.V., Fashchevsky N.N., Bondarenko Yu.N., Andrievsky S.M. USE OF THE MAIN SPHERICAL MIRROR IN TELESCOPES WITH COMPLEX OPTICAL SYSTEMS
18. Sukhov P.P., Yepishev V.P., Motrunich I.I., Sukhov K.P. USING PHOTOMETRIC DATA TO DESCRIBE THE BEHAVIOUR OF OBJECTS IN GEOSTATIONARY ORBIT
RADIO ASTRONOMY

Thursday, 19.08.2021

09:30 – 11:30  Section session (Auditorium №27 Faculty of Biology)
Convener – O.A. Litvinenko

1. Vavilova I.B., Pulatova N.G. PROPERTIES OF THE LOW-REDSHIFT ISOLATED GALAXIES WITH ACTIVE NUCLEI IN THE RADIO SPECTRAL RANGE
2. Ulyanov O.M., Shevtsova A.I., Yerin S.M., Bubnov I.M., Kravtsov I.P. IONOSPHERE VARIABILITY AS A TOOL FOR PULSAR ROTATION MEASURE SIGN DETERMINATION
3. Vasilenko N.M., Sidorchuk M.A. THE UTR-2 LOW FREQUENCY NORTHERN SKY CONTINUUM SURVEY. Part III
4. Sukharev A., Bezrukovs V., Ryabov M., Ulyanov O., Zakharenko V., Konovalenko O., Orbidans A., Ozhinskyi V., Vlasenko V., Bakun D. PROPERTIES OF INTRA-DAY VARIABILITY OF THE RADIO GALAXY PTRSEUS A (3C 84) ACCORDING TO COORDINATED OBSERVATIONS IN LATVIA AND UKRAINE WITH RT-32 RADIO TELESCOPES IN THE 4.5 - 8.8 GHz RANGE
8. Ozhinskyi V., Vlasenko V., Mamarev V., Ulyanov O., Zakharenko V., Palamar M., Chaikovskyi A., Fryz S. THE METHOD FOR RT-32 RADIOTELESCOPE ERROR MATRIX CONSTRUCTION IN AUTOMATIC MODE. AUTOMATIC ASSESMENT OF TRACKING ERRORS

11:30 – 12:00  Coffee break

12:00 – 13:20  Section session (Auditorium №27 Faculty of Biology)
Convener – O.M.Ulyanov

10. Orlov V.V., Lytvynenko O.A., Galanin V.V. PROCESSING OF RADIO ASTRONOMY SIGNALS IN CONDITIONS OF SHORT-TERM INTERFERENCE
11. Kolomiets S., Kryuchenko I. RADIO METEOR INFORMATION AND ITS PROCESSING
12. Galanin V.V. OBSERVATION CONTROL DEVICE FOR THE URAN-4 DECAMETER RADIO TELESCOPE

POSTERS

2. Petkov P. THE BULGARIAN LOFAR PROJECT
SUN, SOLAR ACTIVITY, SOLAR-TERRESTRIAL RELATIONS AND ASTROBIOLOGY

Thursday, 19.08.2021

13:20 – 14:30 Section session (Auditorium №27 Faculty of Biology)

Convener – M.I. Orlyuk

2. Orlyuk M.I., Romenets A.A. ON THE RELATIONSHIP OF TEMPORARY CHANGES IN THE GEOMAGNETIC FIELD AND TEMPERATURE ON THE EARTH'S SURFACE WITH SOLAR ACTIVITY
3. Ryabov M.I., Sukharev A.L., Sobitnyak L.I., Orlyuk M.I. ABOUT FEATURES OF GEOMAGNETIC FIELD VARIATION IN THE ZONE ODESSA MAGNETIC ANOMALY IN QUIET AND DISTURBANCE CONDITIONS SPACE WEATHER

13:00 – 13:30 CLOSING CONFERENCE
SECTION “THE IMPORTANCE OF G. GAMOW'S IDEAS FOR BIOLOGY OF THE 21st CENTURY” (online)

Tuesday, 17.08.2021

11:00 OPENING OF THE BIOLOGICAL SESSION

1. Chebotar S. OPENING OF THE BIOLOGICAL SESSION
2. Delbruck T. "OUT OF THIS WORLD": RECOUNTING MAX'S DELBRUCK MEMORIES OF GEORGE GAMOW

11:50 – 12:00 Coffee break

3. Monczak, Yu. TARGETED THERAPY, DNA SEQUENCE AND THE RACE AGAINST NEOPLASIA
5. Роман І.І., Тістечок С.І., Лужецький А.М., Громико О.М. ГЕНЕТИЧНА ХАРАКТЕРИСТИКА АНТАРКТИЧНИХ АКТИНОБАКТЕРІЙ

13:05 – 14:00 Lunch

6. Dolya B., Ostash B.O. MUTATION SPECTRA IN STREPTOMYCES AS INFERRED FROM GENOMIC ANALYSIS OF NINE S. ALBUS J1074 STRAINS
7. Pydiura N., Breviario D., Blume Ya. UTILISATION OF GENOME EDITING METHODS IN DIAGNOSTICS AND GENETIC ENGINEERING, A REVIEW
8. Roshka N.M., Volkov R.A. STRUCTURAL ORGANIZATION AND POLYMORPHISM OF 5S RDNA IGS IN THE CARPATHIAN HONEYBEE
9. Chubyk I.Yu., Stadnichenko S.V., Chebotar S.V. POLYMORPHISM IN ME15/ME16 AND MICROSATELLITE LOCI OF MYTILUS GALLOPROVINCIALIS IN THE NORTH REGION OF BLACK SEA

15:30 – 15:40 Coffee break

11. Toporash M.K., Motsnyy I.I., Sourdille P., Korzun V., Chebotar S.V. KASP-ANALYSIS OF THE INTROGRESSIVE WHEAT LINES WITH RYE CHROMATINE

17:00 CLOSING OF THE BIOLOGICAL SESSION