

**Program of the international conference**  
**«Radiation mechanisms of astrophysical objects: classics today»**  
 Saint-Petersburg University, Russia, September 21-25, 2015

**General overview**

Date		Morning Session	Lunch	Evening Session
		<b>10.00 – 13.30</b>		<b>15.30 – 19.00</b>
<b>Monday</b> <b>21.09</b>	Registration	<b>10.00 – 13.00</b> Plenary Talks (Assembly Hall)	<b>13.00</b> – <b>14.30</b>	<b>14.30 – 16.10</b> Plenary Talks (Assembly Hall)  <b>17.00 – 20.00</b> Welcome Reception
<b>Tuesday</b> <b>22.09</b>	Registration	<b>Section 2. Interstellar matter</b> (Old Glazenap’s Observatory)  <b>Section 3. Stellar atmospheres and circumstellar matter, planetary atmospheres</b> (Chair of Botany)  <b>Section 4. High-energy astrophysics and cosmology</b> (Petrovsky Hall)	<b>14.00</b> – <b>15.30</b>	<b>13:30 – 14:00</b> Poster session (near the Assembly Hall)  <b>Section 2. Interstellar matter</b> (Old Glazenap’s Observatory)  <b>Section 3. Stellar atmospheres and circumstellar matter, planetary atmospheres</b> (Chair of Botany)  <b>Section 4. High-energy astrophysics and cosmology</b> (Petrovsky Hall)
<b>Wednesday</b> <b>23.09</b>		<b>Section 2. Interstellar matter</b> (Old Glazenap’s Observatory)  <b>Section 3. Stellar atmospheres and circumstellar matter, planetary atmospheres</b> (Chair of Botany)  <b>Section 4. High-energy astrophysics and cosmology</b> (Petrovsky Hall)	<b>14.00</b> – <b>15.30</b>	<b>13:30 – 14:00</b> Poster session (near the Assembly Hall)  <b>Section 1. Radiative transfer theory</b> (Old Glazenap’s Observatory)  <b>Section 3. Stellar atmospheres and circumstellar matter, planetary atmospheres</b> (Chair of Botany)  <b>Section 4. High-energy astrophysics and cosmology</b> (Petrovsky Hall)
<b>Thursday</b> <b>24.09</b>		<b>Section 1. Radiative transfer theory</b> (Old Glazenap’s Observatory)  <b>Section 3. Stellar atmospheres and circumstellar matter, planetary atmospheres</b> (Chair of Botany)  <b>Section 4. High-energy astrophysics and cosmology</b> (Petrovsky Hall)	<b>13.20</b> – <b>15.30</b>	<b>15:30 – 18:00</b> Free time  <b>18:00 – 23:00</b> Conference Dinner
<b>Friday</b> <b>25.09</b>		<b>10.00 – 12.00</b> Plenary Talks (Assembly Hall)  <b>12.00 – 12.15</b> Closing of the conference (Assembly Hall)	<b>12.45</b> – <b>14.30</b>	<b>14.30 – 19.00</b> Excursion to Konstantin palace (Strel’na)

## Detailed program

**Sunday, September 20**

Arrival day

**Monday, September 21**

9.00 – 10.00 Registration (near the Assembly Hall)

### **Morning Session (10.00 - 13.00)**

#### **Plenary Talks**

*(Location: Assembly Hall) – Chair: V.P. Grinin*

10.00 – 10.20 Welcome by SOC and LOC

10.20 – 11.00 Dmitry I. Nagirner (SPbSU, Russia) “V.V.Sobolev and Radiative Transfer Theory”

11.00 – 11.30 Anatoly M. Cherepashchuk (SAI MSU, Russia) “Black holes in binary stellar systems and galactic nuclei”

**11.30 – 12.00 Coffee break**

#### **Plenary Talks**

*(Location: Assembly Hall) – Chair: Y.N. Gnedin*

12.00 – 12.30 Michael Mishchenko (NASA GISS, USA) “Electromagnetic scattering by discrete random media”

12.30 – 13.00 Nail A. Sakhbullin, Ilfan F. Bikmaev (KFU, Russia) “Astrophysical investigations based on RTT-150 observations”

**13.00 – 14.30 Lunch**

### **Evening Session (14.30 - 16.10)**

#### **Plenary Talks**

*(Location: Assembly Hall) – Chair: D.I. Nagirner*

14.30 – 15.00 Yuri N. Gnedin (Pulkovo Observatory, Russia) “Polarimetric Method for Measuring Black Hole Masses in Active Galactic Nuclei based on Theory of V.V.Sobolev”

15.00 – 15.40 Yuri Y. Kovalev (ASC LPI, Russia) “Results of RadioAstron observations of Active Galactic Nuclei with Extreme Angular Resolution”

15.40 – 16.10 Svetlana V. Berdyugina (Freiburg, Germany) “On scattering light in exoplanetary atmospheres”

**16.10 – 17.00 Transfer to Boat Trip**

**17:00 – 20.00 Welcome Reception (Boat trip on the Neva River)**

## Tuesday, September 22

9.00 – 10.00 Registration (near the Assembly Hall)

### Morning Session (10.00 - 13.30)

#### Section 2. Interstellar matter

(Location: Old Glazenap's Observatory) – Chair: J. Krelowski

10.00 – 10.30 Dmitry Wiebe (INASAN, Russia) “Infrared emission of galactic and extragalactic star-forming regions”

10.30 – 11.00 Andres Escala, F. Becerra, J. Utreras (Universidad de Chile, Chile) “Numerical Experiments on the Physical Parameters of the Star formation Law”

11.00 – 11.30 Asoke K. Sen, M.S. Prokopjeva, V.B. Il'in (Assam University, India, SPbSU, Russia) “Interstellar polarization and star formation studies in dark clouds”

#### 11.30 – 12.00 Coffee break

12.00 – 12.15 Maria Murga, S. Khoperskov, D. Wiebe (INASAN, Russia) “Carbonaceous dust emission and evolution in star-forming complexes”

12.15 – 12.30 Vitaly Akimkin (INASAN, Russia) “Photoelectric and collisional charging of dust in protoplanetary disks”

#### Section 3. Stellar atmospheres and circumstellar matter, planetary atmospheres

(Location: Chair of Botany) – Chair: L.I. Mashonkina

10.00 – 10.30 Tatiana Demidova, V.P. Grinin, J.-P. Ruge, S. Wolf (Pulkovo Observatory, Russia, Univer. Kiel, Germany) “Simulation of structures in protoplanetary disks”

10.30 – 11.00 Yaroslav Pavlyuchenkov (INASAN, Russia) “Molecular line emission in protostellar objects”

11.00 – 11.30 Mikhail Pogodin, J.A. Cahuasqui, N.A. Drake et al. (Pulkovo Observatory, Russia, Brazil) “Signatures of magnetospheric accretion in magnetic Herbig Ae stars”

#### 11.30 – 12.00 Coffee break

12.00 – 12.30 Andrey Sobolev, M.D. Gray, A. Alakoz et al. (UrFU, Russia) “Sun-Sized Masers in Cepheus-A”

12.30 – 12.50 Nariman Ismailov, O.V. Khalilov, G.R. Bahaddinova (ShAO, Azerbaijan) “Optical spectrum variability of IL Cep A”

12.50 – 13.10 Olesya Kozlova, I.Yu. Alekseev (CrAO, Russia) “The study of the long-term spectral variability of Ae Herbig star HD 190073”

13.10 – 13.30 Anastasia Bisyarina, A. Sobolev, S. Gorda (UrFU, Russia) “Variation of OII6300 Å line emission in Herbig Be binary star HD 200775”

#### Section 4. High-energy astrophysics and cosmology

(Location: Petrovsky Hall) – Chair: D.G. Yakovlev

10.00 – 10.30 Lev Titarchuk, N. Shaposhnikov and E. Seifina (Russia, USA) “X-ray spectral index correlations vs. mass accretion rate in neutron star and black hole X-ray binaries in their different spectral states. Theory vs. observations”

10.30 – 11.00 Marat Gil'fanov (SRI RAS, Russia) “Role of accreting compact sources in ionizing ISM in elliptical galaxies”

11.00 – 11.30 Sandip K. Chakrabarti (SNBNCBS, India) “Radiative Processes in Accretion and Outflows in Black Holes”

**11.30 – 12.00 Coffee break**

12.00 – 12.30 Sergei Fabrika (SAO, Russia) “Ultraluminous X-ray Sources as Super-Eddington Accretion Disks”

12.30 – 13.00 Juri Poutanen (Univ. of Turku, Finland) “Radiative mechanisms of accreting black holes”

13.00 – 13.30 Andrei Bykov (Ioffe Institute, Russia) “High energy radiation of supernova remnants and starburst regions”

**13:30 – 14:00 Poster session**

**14.00 – 15.30 Lunch**

**Evening Session (15.30 - 18.45)**

**Section 2. Interstellar matter**

*(Location: Old Glazenap’s Observatory) – Chair: D.Z. Wiebe*

15.30 – 16.00 Jacek Krelowski (N.Copernicus Univ., Poland) “Diffuse interstellar bands approaching centenary”

16.00 – 16.30 Nikolai Voshchinnikov, V. Il’in (SPbSU, Russia) “Interstellar polarization: from UV to submm”

16.30 – 17.00 Alexei Alakoz, A. Sobolev, H. Imai et al. (Russia, Japan) “Studies of cosmic water and hydroxyl masers within the "RadioAstron" Space-VLBI project”

**17.00 – 17.30 Coffee break**

17.30 – 17.45 Nadezhda Shakhvorostova, A. Alakoz, A. Sobolev (LPI RAS, Russia) “Estimates of brightness temperatures and angular sizes for a number of maser sources observed by 'RadioAstron”

**Section 3. Stellar atmospheres and circumstellar matter, planetary atmospheres**

*(Location: Chair of Botany) – Chair: M.A. Pogodin*

15.30 – 16.00 Svetlana Hubrig, M. Schöller, A. Kholtygin et al. (Germany, Russia) “Magnetic fields in massive stars: New insights”

16.00 – 16.15 Olga Maryeva, V. F. Polcaro, C. Rossi et al. (Russia, Italy) “Modeling of spectral variability of Romano’s star”

16.15 – 16.30 Evgeniya Nikolaeva, I.F. Bikmaev, N.A. Sakhbullin et al. (KFU, Russia) “Investigation of the parameters of two massive X-ray binary systems”

16.30 – 16.45 Natalia Sudnik, H. Henrichs (Russia, Netherlands) “Stellar prominences to describe cyclical line profile variability of the O6 supergiant lambda Cephei”

16.45 – 17.00 Viacheslav Dushin, A. Kholtygin (SPbSU, Russia) “Non-stationary processes in atmospheres of early-type stars: influence on forbidden to intercombination ratio  $f/i$ ”

**17.00 – 17.30 Coffee break**

17.30 – 18.00 Lidia Oskinova, W.-R. Hamann (Univ. of Potsdam, Germany) “Moving Inhomogeneous envelopes of stars”

18.00 – 18.15 Sofya Alexeeva (INASAN, Russia) “The non-local thermodynamic equilibrium (NLTE) line formation of C I - C II in the A- and late B-type stars”

18.15 – 18.30 Svetlana Yakovleva, A. K. Belyaev (Herzen SPU, Russia) “Model approach for inelastic processes in collisions of heavy-particles with hydrogen”

## Section 4. High-energy astrophysics and cosmology

(Location: Petrovsky Hall) – Chair: Y.Y. Poutanen

- 15.30 – 16.00 Oleg Verkhodanov (SAO, Russia) “Anomalies of low multipoles of WMAP and Planck missions”  
16.00 – 16.30 Saleem Zaroubi (Univ. Groningen, Netherlands) “Simulating the Universes Epoch of Reionization”  
16.30 – 17.00 Sergei Komissarov, O. Porth (Univ. of Leeds, UK) “Stability of AGN jets and the Fanaroff-Riley division”

### 17.00 – 17.30 Coffee break

- 17.30 – 18.00 Nikolai Shakura, K.A. Postnov (SAI MSU, Russia) “A viscous-convective instability in laminar Keplerian thin discs”  
18.00 – 18.15 Subhon Ibadov (IATAS, Tajikistan) “Generation of Hot Plasma and X-Rays in Comets”  
18.15 – 18.30 Vitaliy Grigoryev (SPbSU, Russia) “A 2D model of non-stationary accretion onto a magnetized neutron star”  
18.30 – 18.45 Daria Teplykh (PRAO, Russia) “The fluctuations of emission intensity of PSR J0653+8051 at 111MHz”

# Wednesday, September 23

## Morning Session (10.00 - 13.30)

### Section 2. Interstellar matter

(Location: Old Glazenap’s Observatory) – Chair: V.B. Il’in

- 10.00 – 10.30 Alexander F. Kholtygin (SPbSU, Russia) “V.V.Sobolev and Physics of Gaseous Nebulae”  
10.30 – 11.00 Margarita Sharina, A.Yu. Kniazev (SAI MSU, SALT), I.D. Karachentsev (SAO, Russia), V.V. Shimansky (KFU, Russia) “Age and chemical composition of the nuclei of two unusual dwarf spheroidal galaxies”  
11.00 – 11.30 Evgenii Vasiliev, B. Nath, Yu. Shchekinov (SFU, Russia) “Energy budget in multiple supernova explosions”

### 11.30 – 12.00 Coffee break

### Section 3. Stellar atmospheres and circumstellar matter, planetary atmospheres

(Location: Chair of Botany) – Chair: A.M. Sobolev

- 10.00 – 10.30 Tatyana Sitnova, L. I. Mashonkina, T.A. Ryabchikova (INASAN, Russia) “A non-LTE line formation for neutral and singly-ionised titanium in model atmospheres of the reference A-K stars”  
10.30 – 11.00 Lyudmila Mashonkina, A. Belyaev (INASAN, Russia) “Non-LTE line formation for Al I and Si I in stellar atmospheres, with applying accurate data on inelastic collisions with neutral hydrogen atoms”  
11.00 – 11.15 Egor Morchenko (SAI MSU, Russia) “Continuum and line emission of flares on red dwarf stars”  
11.15 – 11.30 Ol’ga Golubchina (SAO, SPb branch, Russia) “Properties of the solar polar coronal holes radiation according to radio observations”

### 11.30 – 12.00 Coffee break

12.00 – 12.30 Larisa Tambovtseva, V. Grinin (Pulkovo Observatory, Russia) “Non-LTE models of the emitting regions in hot young stars”

12.30 – 13.00 Konstantin Bychkov (SAI MSU, Russia) “Nonstationary Hydrogen and Helium discrete level occupation behind shock front”

13.00 – 13.30 Anatoly Tarasov (CrAO, Russia) “The relative content of the Be stars in the young open clusters”

## Section 4. High-energy astrophysics and cosmology

(Location: Petrovsky Hall) – Chair: S.N. Fabrika

10.00 – 10.30 Dmitry Yakovlev (Ioffe Institute, Russia) “Transport properties of nuclear pasta in neutron stars”

10.30 – 11.00 Alexander Potekhin (Ioffe Institute, Russia) “Atmospheres and radiating surfaces of neutron stars with strong magnetic fields”

11.00 – 11.30 Aleksandr Kaminker, A.A. Kaurov, A.Y. Potekhin and D.G. Yakovlev (Ioffe Institute, Russia) “Thermal radiation of neutron stars with internal heaters”

### 11.30 – 12.00 Coffee break

12.00 – 12.30 Elena Seifina, L. Titarchuk (SAI MSU, Russia, Univ. Ferrara, Italy) “Spectral properties of NS X-ray binary 4U1705-44 with BeppoSAX and RXTE. Quasi-constancy of the spectral index vs. accretion rate”

12.30 – 13.00 Konstantine Postnov, M.I. Gornostaev, N.I. Shakura et al. (SAI MSU, Russia) “On the dependence of the X-ray continuum variations with luminosity in accreting X-ray pulsars”

13.00 – 13.30 Nazar Ikhsanov, L. Pustil'nik (Russia, Israel) “How accreting matter enters the magnetic field of neutron stars?”

### 13:30 – 14:00 Poster session

### 14.00 – 15.30 Lunch

## Evening Session (15.30 - 19.00)

### Section 1. Radiative transfer theory

(Location: Old Glazenap's Observatory) – Chair: A.G. Nikoghossian

15.30 – 16.00 Hovhannes Pikichyan (BAO, Armenia) “On linear properties of the nonlinear problem of radiation transfer”

16.00 – 16.30 Alex C. Carciofi, J. E. Bjorkman (Univ. de São Paulo, Brazil, Univ. Toledo, USA) “3-D NLTE radiative transfer models using the Sobolev Method”

16.30 – 17.00 Janna Dlugach, M. Mishchenko (Ukraine, USA) “Numerical simulation of electromagnetic scattering by morphologically complex objects”

### 17.00 – 17.30 Coffee break

17.30 – 18.00 Helmut Domke (Germany) “Inhomogeneous atmospheres – On transforming conservative multiple scattering to nonconservative multiple pseudo-scattering”

18.00 – 18.30 Haik Harutyunian, G.Alecian, Q.G.Khachatryan, A.V.Vardanyan (BAO, Armenia) “Description of Frequency Redistribution Functions via Bilinear Expansions”

### Section 3. Stellar atmospheres and circumstellar matter, planetary atmospheres

(Location: Chair of Botany) – Chair: A.F.Kholtygin

15.30 – 16.00 Nikolai Kiselev, V. Rosenbush, S. Zaitsev et al. (MAO NASU, Ukraine) “Polarimetric properties of icy moons of the outer planets”

- 16.00 – 16.15 Valentine Yankovsky (SPbSU, Russia) “O<sub>2</sub> dayglow atmospheric emissions as tracers for variations of atmospheric composition in the mesosphere and low thermosphere”
- 16.15 – 16.30 Natalia Katysheva, V. Grinin (SAI MSU, Pulkovo Observatory, Russia) “Relative intensities of the hydrogen lines as a tool for diagnostics of the astrophysical plasma”
- 16.30 – 16.45 Bulat Nizamov, M. Livshits (SAI MSU, Russia) “Optical Continuum of Powerful Solar and Stellar Flares”
- 16.45 – 17.00 Gennady Chernov (IZMIRAN, Russia) “Fine structure of the solar radio emission”

**17.00 – 17.30 Coffee break**

- 17.30 – 18.00 Igor Savanov (INASAN, Russia) “Study of cold spots on the surface of the stars on to the Kepler space telescope data”

## Section 4. High-energy astrophysics and cosmology

*(Location: Petrovsky Hall) – Chair: L.G. Titarchuk*

- 15.30 – 16.00 Eugene Churazov (SRI RAS, Russia) “Gamma radiation of SN Ia in the galaxy M82”
- 16.00 – 16.30 Sergei Levshakov (Ioffe Institute, Russia) “Testing the variation of fundamental constants by astrophysical methods: overview and prospects”
- 16.30 – 17.00 Alexey Vikhlinin (SAO, USA) “X-ray Observations of Galaxy Clusters: Cosmology and Physics of the Hot Intracluster”

**17.00 – 17.30 Coffee break**

- 17.30 – 18.00 Dmitry Sokoloff (MSU, IZMIRAN, Russia) “RM-synthesis: problems and perspectives”
- 18.00 – 18.30 Pascal Chardonnet, V. Chechetkin, M. Popov, A. Filina, A. Baranov (Univ. de Savoie, France) “Cosmic Gamma-Ray Bursts: a challenge for radiation processes in Astrophysics”
- 18.30 – 19.00 Edward Khachikian (BAO, Armenia) “Problems of dualcore galaxies”

# Thursday, September 24

## Morning Session (10.00 - 13.20)

### Section 1. Radiative transfer theory

*(Location: Old Glazenap's Observatory) – Chair: J.M. Dlugach*

- 10.00 – 10.30 Tõnu Viik (Tartu, Estonia) “On the complex Milne problem”
- 10.30 – 11.00 Nikolai Rogovtsov, F.N. Borovik (BNTU, Belarus) “Applications of General Invariance Relations Reduction Method to Solutions of Radiation Transfer Problems”
- 11.00 – 11.30 Arthur Nikoghossian (BAO, Armenia) “On some directions of development of the radiative transfer theory”

**11.30 – 12.00 Coffee break**

- 12.00 – 12.30 Aleksander Kolesov (SPbSU, Russia) “On the development of the asymptotic theory of non-stationary radiative transfer”



### Section 3. Stellar atmospheres and circumstellar matter, planetary atmospheres

(Location: Chair of Botany) – Chair: N.A. Katysheva

10.00 – 10.30 Moisey Livshits, M. Katsova (IZMIRAN, Russia) “Superflares on Late-Type Stars: Radiative Losses and other Problems of Modeling of the Gas-Dynamical Processes”

10.30 – 10.45 Ilya Alekseev, O.V. Kozlova (CrAO, Russia) “The nature of long-term spectral variability of IN Com”

10.45 – 11.00 Oksana Belova (SAI MSU, Russia) “On the localization of emission lines region in Mira stars”

#### 11.30 – 12.00 Coffee break

(Location: Chair of Botany) – Chair: D.D. Sokoloff

12.00 – 12.30 Rustam Dagkesamanskii, V. Shishov, I. Chashei et al. (PRAO, Russia) “Monitoring of variable radio sources at 111 MHz with the multi-beam radio telescope BSA LPI”

12.30 – 12.50 Ilya Potravnov, V.P. Grinin, D.N. Shakhovskoy, D.E. Mkrtchian (Pulkovo Observatory, Russia) “Accretion and outflow activity on the late phases of PMS evolution. The case of RZ Piscium”

12.50 – 13.05 Elena Babina, S.A. Artemenko, P.P. Petrov (CrAO, Russia) “Dynamics of wind and variations of circumstellar extinction in the classical T Tauri star RY Tau”

13.05 – 13.20 Alexey Medvedev, A. Kholtygin (SPbSU, Russia) “Magnetic field distribution for massive stars”

### Section 4. High-energy astrophysics and cosmology

(Location: Petrovsky Hall) – Chair: A.A. Vikhlinin

10.00 – 10.30 Rustam Dagkesamanskii, I. Zheleznykh (PRAO, Russia) “Giant Radio Telescopes as the Detectors of UHE Cosmic Rays and the New Possibilities with the SKA”

10.30 – 10.50 Alexander Mushtukov, V. Suleimanov, S. Tsygankov et al. (Russia, Germany) “X-ray pulsars in a wide luminosity range”

10.50 – 11.10 Nina Beskrovnaya, P. Isakova, A. Zhylykin et al. (Pulkovo Observatory, Russia) “Signs of a dead transient disk in AE Aquarii”

11.10 – 11.30 Andrey Kazantsev, V. Potapov (PRAO, Russia) “Search for the Giant Pulses (GPs) – an extreme phenomenon in radio pulsar emission”

#### 11.30 – 12.00 Coffee break

12.00 – 12.30 Alexander Lutovinov, M. Revnivtsev, S. Tsygankov, R. Krivonos (SRI RAS, Russia) “X-ray binary systems through the eyes of INTEGRAL”

12.30 – 12.50 Alexander Vinokurov, S. Fabrika (SAO, Russia) “Optical spectroscopy of Ultra-luminous X-ray sources with BTA”

12.50 – 13.20 Pavel Ivanov, J. C. B. Papaloizou, S.-J. Paardekooper et al. (Russia, UK) “The evolution of a binary in a retrograde circular orbit embedded in an accretion disk”

13.20 – 13.50 Dmitry Nagirner (SPbSU, Russia) “Synchro-self-Compton mechanism”

#### 13.50 – 15.30 Lunch

15:30 – 18:00 Free time

18:00 – 23:00 Conference Dinner



## Friday, September 25

### Morning Session (10.00 - 12.15)

#### Plenary Talks

*(Location: Assembly Hall) – Chair: A.M. Cherepashchuk*

10.00 – 10.40 Sergei A. Balashev, D.A. Varshalovich, A.V. Ivanchik, V.V. Klimenko (Ioffe Institute, Russia) “Molecular hydrogen absorption systems at high redshifts”

10.40 – 11.20 Rashid A. Sunyaev (SRI RAS, Russia) “Spectral distortion of CMB and new results of the satellite PLANCK, ground telescope at the South Pole and Cosmological Telescope in the Atacama desert”

11.20 – 12.00 Vladimir P. Grinin (Pulkovo Observatory, Russia) “The Sobolev approximation in the development and astrophysical applications”

### 12.00 – 12.15 Closing of the conference

12.15 – 12.45 Coffee break

14.30 – 15.30 Transfer to Konstantin palace (Strel’na)

15.30 – 19.00 Excursion to Konstantin palace (Strel’na)

## Saturday, September 26

Departure day

## List of posters

1. Martin Abrahamyan (YSU, Armenia) "Some structural features of vortices in gravitating gaseous disk"
2. Julia Aikasheva (Herzen SPU, Russia), A.K. Belyaev, S.A. Yakovleva "Atomic data for inelastic processes in low-energy rubidium-hydrogen collisions"
3. Sergei Balashev, E.E. Kholupenko, J.Chluba, A.V.Ivanchik, D.A.Varshalovich (Ioffe Institute, Russia) "Spectral distortions of the CMB dipole"
4. Dmitry Barsukov, A.I. Tsygan (Ioffe Institute, Russia) "The influence of small scale magnetic field on the polar cap X-ray luminosity of old radio pulsars"
5. Andrey Dementyev (SPbSU, Russia) "Polarization of resonance lines in case of polarized primary sources of radiation"
6. Subhon Ibadov (IA TAS, Tajikistan) "Search for High-Energy Photons from Comets During Solar Flares"
7. Alexander Khoperskov (VolSU, Russia), S. Khoperskov, E. Vasiliev, A. Sobolev "Molecular clouds dynamics in the Milky Way"
8. Vitaliy Kim, N.R. Ikhsanov (CAO RAS, Russia) "Origin of the isolated neutron star with anomalously long period 6.7hr"
9. Flera Kopylova, Alexander Kopylov (SAO RAS, Russia) "Structure of galaxy groups and clusters and measurement their masses"
10. Flera Kopylova, Alexander Kopylov (SAO RAS, Russia) "The fundamental plane of clusters and groups of galaxies"
11. Olga Maryeva (SAO RAS, Russia), E. L. Chentsov "LBV stars HD168625 and HD168607 and their environment"
12. Anna Mokrushina (Pulkovo Observatory, Russia) "The calculation of parameters for supernovae employing AZT-8 and LX200 telescopes"
13. Aleksandr Nesterenok (Ioffe Institute, Russia) "Simulation of CH<sub>3</sub>OH masers: accelerated lambda iteration method and Sobolev approximation"
14. Marat Potashov, S.I. Blinnikov, V.P. Utrobin (ITEP, Russia) "The importance of time-dependent hydrogen ionization in the modeling of supernovae of type IIP"
15. Marina Prokopjeva (SPbSU, Russia), Yu.S. Efimov, V.B. Il'in "Dust in outer layers of B5 globule"
16. Dmitry Rodionov (Herzen SPU, Russia), Andrey K. Belyaev "Low-energy inelastic magnesium-hydrogen collisions"
17. Svetlana Sali (UrFU, Russia), S. Parfenov, A. Sobolev "Effect of more exact collisional coefficients on estimations of physical parameters of starforming regions obtaining on methanol lines"
18. Svetlana Sali (UrFU, Russia), N. Kalinina, S. Parfenov "Applying of an improved model of collisional coefficients on estimation of physical parameters of NGC6334I"
19. Alexander Semyannikov (VolSU, Russia) "Behavior of perturbations in an accretion flow on to a black hole"
20. Stanislav Shirokov (SPbSU, Russia) "Correlation of radial fluctuations in deep galaxy redshift surveys"
21. Nikolai A. Silant'ev (Pulkovo Observatory, Russia), G. A. Alekseeva, V. V. Novikov "Radiative transfer and spectra in stochastic atmospheres"
22. Ksenia Smirnova, M. Murga, D. Wiebe, A. Sobolev (UrFU, INASAN, Russia) "Determination of the relation between the components of the interstellar medium in H II complexes"
23. Anatoly Tarasov (CrAO, Russia) "Orbital parameters and variability of the emission spectrum massive double system 105 Tau"
24. Oleg Verkhodanov (SAO RAS, Russia), Elena K. Majorova, Olga P. Zhelenkova, Dmitriy I. Solovyov, Margarita L. Khabibullina, Olesya S. Ulakhovich "Faint radio galaxies on the Planck mission maps"
25. Yaroslav Voronov (Herzen SPU, Russia), A.K. Belyaev, S.A. Yakovleva "The study of inelastic processes in collisions of beryllium and hydrogen"
26. Valeria Yakovleva, O. Merkulova, G. Karataeva, L. Shalyapina, N. Yablokova (SPbSU, Russia) "Galaxies at different stages of interaction"