

Curriculum Vitae and Publications

Name: **Sergey Karpov**
Birth date: Sep 23, 1979
Nationality: Russian
Phone: +420 773 156 719
E-mail: karpov.sv@gmail.com
Skype: karpov_sv
ORCID ID: [0000-0003-0035-651X](https://orcid.org/0000-0003-0035-651X)

Current affiliation:
CEICO, Institute of Physics, Czech Academy
of Sciences
Current Address:
Office 207
Na Slovance 1999/2
182 21 Praha 8, Czech Republic

CV online: <https://goo.gl/q8f3zW>

ACADEMIC BACKGROUND

- 2003 - **MSc in Astronomy**, Moscow State University, Russia
thesis: Observational appearances of accreting isolated stellar mass black holes,
supervisor: Gregory Beskin
- 2007 - **PhD in Astronomy**, Special Astrophysical Observatory, Russia
thesis: Observational appearances of rapidly variable relativistic objects, supervisor:
Gregory Beskin

RESEARCH CAREER

- 1997-2003 - **student** in Moscow State University, Russia
- 2000,2002,2003,2004 - **trainee**, supervised by Dr. Andrew Shearer, NUI Galway,
Computational Astrophysics Group
- 2003-2006 - **PhD student**, supervised by Dr. Gregory Beskin, Special Astrophysical
Observatory, Russian Academy of Sciences
- 2006-2009 - **researcher**, group of relativistic astrophysics, Special Astrophysical
Observatory, Russian Academy of Sciences
- since 2009 - **senior researcher**, group of relativistic astrophysics, Special
Astrophysical Observatory, Russian Academy of Sciences
- since 2014 - **researcher**, Institute of Physics, Kazan Federal University, Russia
- since 2018 - **senior researcher**, CEICO, Institute of Physics, Czech Academy of
Sciences

RESEARCH INTERESTS

Relativistic Astrophysics: accretion processes, isolated black holes, radiopulsars, gamma-ray bursts

High Temporal Resolution Astrophysics: photon counting, variability analysis, flaring processes, rapid transients

Astrophysical Experiment: wide-field monitoring, time-domain sky surveys, real-time data analysis pipelines, transient detection and classification algorithms, astronomical detectors and acquisition software

Astroinformatics: databases, large astronomical catalogues, data mining, statistical methods

FUNDING AND COLLABORATION IN RESEARCH GRANTS

- 2004-2006 - RFBR (Russian Foundation for Basic Research) grant "Search for and investigation of relativistic objects with high time resolution" (PI: Dr. Gregory Beskin)
- 2005-2007 - INTAS project "Development and manufacture of an optical position-sensitive detector with high time resolution", (PI: Dr. Noah Brosch)
- 2005-2007 - RFBR grant "Investigation of algorithms for semi-structured information search and development of search and information system Astronet" (PI: Oleg Bartunov)
- 2006-2007 - RFBR grant "Measurements of meteor matter flux through Near-Earth Space" (PI: Dr. Victor Shargorodskiy and Dr. Alexander Bagrov)
- 2007-2009 - RFBR grant "A study of ultraluminous X-ray sources in galaxies" (PI: Dr. Sergei Fabrika)
- 2009-2011 - RFBR grant "Modeling the Galactic interstellar extinction distribution in three dimensions" (PI: Dr. Olga Dluzhnevskaya)
- 2009-2010 - RFBR grant "Development of sky monitoring system with subsecond temporal resolution" (PI: Dr. Gregory Beskin)
- 2009-2011 - RFBR grant "The research of algorithms for semantic integration of text based scientific information and raw astronomical data in the framework of the Astronet project" (PI: Oleg Bartunov)
- 2012-2014 - RFBR grant "Theoretical and observational studies of relativistic objects manifestations in gamma-ray bursts" (PI: Dr. Gregory Beskin)
- 2012-2015 - GLORIA ("GLOBal Robotic-telescopes Intelligent Array") project funded by European Union (FP7) (PI: Dr. Francisco Sanchez Moreno)
- 2014-2018 - Russian Science Foundation grant "Evolution of stars from their birth till the origin of life" (PI: Dr. Yuri Balega)
- 2017-2018 - RFBR grant "Determination of fundamental characteristics of interstellar absorption" (PI: Dr. Oleg Malkov)

FELLOWSHIPS AND TRAVEL GRANTS

- 2002 - RFBR (Russian Foundation for Basic Research) travel grant for participation in "APCTP Winter School on Black Hole Astrophysics 2002"
- 2004 - RFBR travel grant for participation in "Gamma-Ray Bursts in the Afterglow Era: 4th Workshop"
- 2009-2010 – individual grant of the President of Russian Federation for the support of young Russian scientists
- 2010-2013 – individual grant of Dynasty foundation for young Russian scientists
- 2011 - RFBR travel grant for participation in Russian-Indian seminar "Gamma-ray bursts, the evolution of massive stars and star forming at high redshifts"

HONOURS

- 2002 - First prize at all-Russian competition of student astronomical research "Astronet-2002"

- 2004 - Kopylov's scholarship for young scientists, Special Astrophysical Observatory
- 2009, 2010, 2017 - Awards for the annual competition of scientific works of Special Astrophysical Observatory

SKILLS AND EXPERTISE

- Analytical and numerical solutions for astrophysical emission problems (synchrotron, Compton, SSC).
- Accretion theory (especially spherical accretion of magnetized gas)
- Population synthesis (brief experience with "Scenario Machine" code by Lipunov group, also custom population synthesis codes)
- Statistical methods (time series, maximum likelihood, bayesian inference, hypothesis testing).
- Observer experience on 6-m telescope with custom equipment (position-sensitive photon counters), as well as on small-scale instruments (FAVOR, TORTORA and Mini-MegaTORTORA wide-field cameras).
- Calibration and investigation of properties of different imaging detectors (MCP-based position-sensitive photon counters, sCMOS detectors, EMCCD detectors, CCDs)
- Creation of high-speed data acquisition systems (for sCMOS and EMCCD)
- Creation of data analysis tools for custom data formats (for position-sensitive photon counters)
- Creation of complete real-time data processing pipelines for high speed transient detection, classification and follow-up (for FAVOR, TORTORA and Mini-MegaTORTORA wide-field monitoring cameras)
- Creation of telescope control and observatory automation software (FAVOR, TORTORA and Mini-MegaTORTORA control software)
- Handling of large data streams and creation of data archives (Mini-MegaTORTORA data archive, public databases of meteors and artificial satellites observed by Mini-MegaTORTORA)
- Scientific programming in Python (ipython/numpy/matplotlib/scipy stack), R and IDL
- Low-level programming in C (low-level optimizations, networking, multi-threading, distributed systems)
- Web programming in Python (Django, Twisted) and Javascript
- Database programming (writing custom extension modules for PostgreSQL)
- Shell scripting (bash, awk, POSIX utilities)
- Basic knowledge of Fortran, Perl, Lua, Maple, IDL, parallel programming with OpenMP, GUI programming with Qt
- Operating systems experience: Linux (admin level), Unix-likes (advanced user), Mac OS X

ACTIVITIES

- 138 articles in ADS, 57 refereed, 662 citations, h-index 11
- Referee for Astronomical Journal, Astrophysical Bulletin

TEACHING

- Supervisor of one MSc thesis defended at Moscow State University, Russia
- Co-supervisor of one MSc and one PhD thesis at South Federal University, Russia and one PhD thesis at Bologna University, Italy

SELECTED PEER-REVIEWED PUBLICATIONS

1. Oleg Malkov, Sergey Karpov, Dana Kovaleva, Sergey Sichevsky, Dmitry Chulkov, Olga Dluzhnevskaya, Alexey Kniazev, Areg Mickaelian, Alexey Mironov, Jayant Murthy, Alexey Sytov, Gang Zhao, Aleksandr Zhukov. Verification of photometric parallaxes with Gaia DR2 data, **Galaxies**, 2019, 7, 7, 12pp
2. Sergey Karpov, Martin Jelinek, Jan Štrobl. Looking for fast optical bursts from FRB121102: Case study for a small telescopes with sub-second temporal resolution, **Astronomische Nachrichten**, 2019, Volume 340, Issue 7, Pages 613-617
3. S.Karpov, G.Beskin, V.Plokhotnichenko, Yu.Shibanov, D.Zyuzin. The study of coherent optical pulsations of the millisecond pulsar PSR J1023+0038 on Russian 6-m telescope, **Astronomische Nachrichten**, 2019, Volume 340, Issue 7, Pages 607-612
4. S.Karpov, A.Bajat, A.Christov, M.Prouza. Evaluation of scientific complementary metal–oxide–semiconductor sensors for sky survey applications, **Astronomische Nachrichten**, 2019, Volume 340, Issue 7, Pages 638-645
5. Karpov S.V., Beskin G.M., Biryukov A.V., Bondar S.F., Ivanov E.A., Katkova E.V., Orekhova N., Perkov A.V., Sasyuk V.V. Photometric calibration of a wide-field sky survey data from Mini-MegaTORTORA, **Astronomische Nachrichten**, 2018, Volume 339, Issue 5, Pages 375-381
6. Karpov S.V., Cunniffe R., Ebr J., Janecek P. Testing the non-linearity of Moravian Instruments G4-16000 CCD camera, **Astronomische Nachrichten**, 2018, Volume 339, Issue 5, Pages 391-396
7. Oleg Malkov, Sergey Karpov, Elena Kilpio, Sergey Sichevsky, Dmitry Chulkov, Olga Dluzhnevskaya, Dana Kovaleva, Alexei Kniazev, Areg Mickaelian, Alexey Mironov, Jayant Murthy, Alexey Sytov, Gang Zhao, Aleksandr Zhukov. Interstellar extinction from photometric surveys: application to four high-latitude areas, 2018, **Open Astronomy**, 27, 1, pp.62-69
8. Zhang, B.-B.; Zhang, B.; Castro-Tirado, A. J.; Dai, Z. G.; Tam, P.-H. T.; Wang, X.-Y.; Hu, Y.-D.; Karpov, S.; Pozanenko, A.; Zhang, F.-W.; Mazaeva, E.; Minaev, P.; Volnova, A.; Oates, S.; Gao, H.; Wu, X.-F.; Shao, L.; Tang, Q.-W.; Beskin, G.; Biryukov, A.; Bondar, S.; Ivanov, E.; Katkova, E.; Orekhova, N.; Perkov, A.; Sasyuk, V.; Mankiewicz, L.; Żarnecki, A. F.; Cwiek, A.; Opiela, R.; Zdrożny, A.; Aptekar, R.; Frederiks, D.; Svinkin, D.; Kusakin, A.; Inasaridze, R.; Burhonov, O.; Romyantsev, V.; Klunko, E.; Moskvitin, A.; Fatkhullin, T.; Sokolov, V. V.; Valeev, A. F.; Jeong, S.; Park, I. H.; Caballero-García, M. D.; Cunniffe, R.; Tello, J. C.; Ferrero, P.; Pandey, S. B.; Jelínek, M.; Sánchez-Ramírez, R.; Castellón, A. “Transition from Fireball to Poynting-flux-dominated Outflow in Three-Episode GRB 160625B”, 2018, **Nature Astronomy**, 2, 69–75

9. G. Beskin, S. Karpov, V. Plokhotnichenko, A. Stepanov, Yu. Tsap. "Polarimetric observations of flaring stars on Russian 6-m telescope", Proceedings of International Conference "Stars: from collapse to collapse", **ASP Conference Series**, 2017, vol.510, p.303
10. Beskin, G.; Karpov, S.; Plokhotnichenko, V.; Stepanov, A.; Tsap, Yu. "Discovery of the Sub-second Linearly Polarized Spikes of Synchrotron Origin in the UV Ceti Giant Optical Flare", 2017, **PASA**, Volume 34, id.e010, 12 pp.
11. Beskin G.M., Karpov S.V., Biryukov A.V., Bondar S.F., Ivanov E.A., Katkova E.V., Orekhova N., Perkov A.V., Sasyuk V.V. "Wide-field monitoring with Mini-MegaTORTORA multi-channel telescope with high temporal resolution", 2017, **Astrophysical Bulletin**, Volume 72, Issue 1, pp.81-92
12. Maryeva, O. V.; Chentsov, E. L.; Goranskij, V. P.; Dyachenko, V. V.; Karpov, S. V.; Malogolovets, E. V.; Rastegaev, D. A. On the nature of high reddening of Cygnus OB2 #12 hypergiant, 2016, **MNRAS**, Volume 458, Issue 1, pp.491-507
13. I.S. Savanov, V.I. Puzin, E.S. Dmitrienko, S.V. Karpov, G.M. Beskin, A.V. Biryukov, S.F. Bondar, E.A. Ivano, E.V. Katkova, N. Orekhova, A.V. Perkov, V.V. Sasyuk, I.I. Romanyuk, E.A. Semenko, D. Kudryavtsev, S. Karmakar, J.C. Pandey, S.B. Pandey, S. Joshi and K. Misra. "Photometric Observations of LO Peg in 2014-2015", 2016, **Acta Astronomica**, vol.66 No.3 pp.381-390
14. Biryukov, A.; Beskin, G.; Karpov, S.; Bondar, S.; Ivanov, E.; Katkova, E.; Perkov, A.; Sasyuk, V. "The first light of Mini-MegaTORTORA wide-field monitoring system", 2015, **Baltic Astronomy**, Vol. 24, p. 100-108
15. Zakharov, A.; Mironov, A.; Biryukov, A.; Kroussanova, N.; Prokhorov, M.; Beskin, G.; Karpov, S.; Bondar, S.; Ivanov, E.; Perkov, A.; Sasyuk, V. "On the Atmospheric Extinction Reduction Procedure in Multiband Wide-Field Photometric Surveys", 2015, **Acta Astronomica**, vol 65, no 2, p. 197-204
16. Beskin, G. M.; Oganessian, G.; Greco, G.; Karpov, S. "Statistical analysis of the parameters of gamma-ray bursts with known redshifts and peaked optical light curves", 2015, **Astronomical Bulletin**, Volume 70, Issue 4, pp.400-413
17. S. Karpov, G. Beskin, V. Plokhotnichenko. "Search for isolated black holes: past, present, future", 2014, **Acta Polytechnica**, 54, 271.
18. Biryukov, A.; Beskin, G.; Karpov, S. "Monotonic and cyclic components of radio pulsar spin-down", 2012, **MNRAS**, Volume 420, Issue 1, pp. 103-117
19. Greco, G.; Rosa, R.; Beskin, G.; Karpov, S.; Romano, L.; Guarnieri, A.; Bartolini, C.; Bedogni, R. "Evidence of Deterministic Components in the Apparent Randomness of GRBs: Clues of a Chaotic Dynamic", 2011, **Nature Scientific Reports**, Volume 1, id. 91
20. Beskin, G.; Karpov, S.; Bondar, S.; Greco, G.; Guarnieri, A.; Bartolini, C.; Piccioni, A. "Fast Optical Variability of a Naked-eye Burst—Manifestation of the Periodic Activity of an Internal Engine", 2010, **ApJ**, Volume 719, Issue 1, pp. L10-L14
21. Beskin, G.M.; Karpov, S.V.; Bondar, S.F.; Plokhotnichenko, V. L.; Guarnieri, A.; Bartolini, C.; Greco, G.; Piccioni, A. "Discovery of the fast optical variability of GRB 080319B and the prospects for wide-field optical monitoring with high time resolution", 2010, **Physics Uspekhi**, Vol. 53, Issue 4, pp. 406-414
22. Beskin, G.; Bondar, S.; Karpov, S.; Plokhotnichenko, V.; Guarnieri, A.; Bartolini, C.; Greco, G.; Piccioni, A.; Shearer, A.. "From TORTORA to MegaTORTORA—Results and Prospects of Search for Fast Optical Transients", 2010, **Advances in Astronomy**, 2010, article id. 171569

23. Karpov, S.; Beskin, G.; Bondar, S.; Guarnieri, A.; Bartolini, C.; Greco, G.; Piccioni, A. "Wide and Fast: Monitoring the Sky in Subsecond Domain with the FAVOR and TORTORA Cameras", 2010, **Advances in Astronomy**, 2010, article id. 784141
24. Debur, V. G.; Beskin, G. M.; Karpov, S. V.; Plokhotnichenko, V. L.; Terekhov, A. S.; Kosolobov, S. S.; Shaibler, G. E. "High temporal resolution coordinate-sensitive detector with gallium-arsenide photocathode", 2009, **Astrophysical Bulletin**, Volume 64, Issue 4, pp.386-391
25. Plokhotnichenko, V. L.; Beskin, G. M.; de Bur, V. G.; Karpov, S. V.; Bad'in, D. A.; Lyubetskaya, Z. V.; Lyubetskij, A. P.; Pavlova, V. V. "High-temporal resolution multimode photospectropolarimeter", 2009, **Astrophysical Bulletin**, Volume 64, Issue 3, pp.308-316
26. P.Abolmasov, S.Karpov, T.Kotani. "Optically thick outflows of supercritical accretion discs: radiative diffusion approach", 2009, **PASJ**, v.61 no.2, pp.213-226
27. Racusin, J. L.; Karpov, S. V.; Sokolowski, M. and 90 more. "Broadband observations of the naked-eye γ -ray burst GRB080319B", 2008, **Nature**, Volume 455, Issue 7210, pp. 183-188
28. Beskin, G.; Biryukov, A.; Karpov, S.; Plokhotnichenko, V.; Debur, V. "Observational appearances of isolated stellar-mass black hole accretion - Theory and observations", 2008, **Advances in Space Research**, Volume 42, Issue 3, p. 523-532
29. Beskin, G.; de-Bur, V.; Karpov, S.; Plokhotnichenko, V.; Terekhov, A.; Kosolobov, S.; Sheibler, H.; Brosch, N.; Shearer, A.; Molinari, E. "Panoramic detector with high time resolution on base of GaAs photocathode", **Proceedings of the SPIE**, Volume 7021, article id. 702120, 9 pp.
30. Biryukov, A., Beskin, G., Karpov, S. "On the peculiarities in the rotational frequency evolution of isolated neutron stars", **ApSS**, 2007, 308, 551-555.
31. Karpov, S., Beskin, G., Biryukov, A., Plokhotnichenko, V., Debur, V., Shearer, A. "Short time scale pulse stability of the Crab pulsar in the optical band", **ApSS**, 2007, 308, 595-599.
32. S.Koposov, O.Bartunov, S.Karpov, "Storing and accessing the largest astronomical catalogues with the SAI CAS project", **Highlights of Astronomy**, V.14, p.586
33. S. Karpov, G. Beskin, A. Biryukov, S. Bondar, K. Hurley E. Ivanov, E. Katkova, A. Pozanenko, I. Zolotukhin, "Optical camera with high temporal resolution to search for transients in the wide field", 2005, **Nuovo Cimento C**, 2005, vol. 28, issue 4, pp. 747-750
34. Beskin G.M., Karpov S.V. "Low-rate accretion onto isolated stellar mass black holes". **Astronomy and Astrophysics**, 2005, 440, 223-238
35. S.N.Fabrika, P.K.Abolmasov, S.V.Karpov, O.N.Sholukhova, K.K.Ghosh. "Ultraluminous X-ray sources in galaxies - microquasars or intermediate mass black holes?", **Physics Uspekhi**, 49, 3, pp.324-329, 2005
36. Karpov, S., Bad'in, V., Beskin, G., and 24 more. "FAVOR (FASt Variability Optical Registration) - Two-telescope Complex for Detection and Investigation of Short Optical Transients", 2004, **Astronomische Nachrichten**, 325, 677
37. Beskin, G.M., Karpov S.V., "Accretion of magnetized gas onto a single stellar mass black hole", 2002, **Gravitation and Cosmology Suppl.**, 8, 182
38. Karpov, S.V., Lipunov, V.M., "Why do we see so few black holes in massive binaries?", 2001, **Astronomy Letters**, 27, 645

MAJOR ACHIEVEMENTS

- In 2002-2005, I developed a model of magnetized spherical accretion onto stellar mass black holes, applicable for studying observational appearances of isolated stellar mass black holes - remnants of massive single stars - which should be abundant in the Galaxy, but still not detected directly. I predicted hard x-ray and gamma-ray emission from such objects - a result that may be used to formulate a program to search for such objects. This model has been published in Beskin&Karpov (2005) and has 15 citations in ADS as of now.
- In 2008, using TORTORA wide-field monitoring camera (which I had developed earlier together with my colleagues, and for which I created all operational, data acquisition and processing software and which I operated remotely) I detected the brightest ever optical flash accompanying GRB080319B, Naked-Eye Burst. It resulted in discovery paper in Nature (Racusin, Karpov et al. 2008 - 327 citations in ADS) and detailed physical analysis paper in ApJ (Beskin, Karpov et al. 2010 - 38 citations in ADS) where we demonstrated that most of popular models of prompt optical emission are inapplicable for this burst, and interpreted it as a result of high neutronization of the ejecta.
- I actively participated in the design and development of Mini-MegaTORTORA, novel multi-channel wide-field monitoring complex designed by us after the Naked-Eye Burst. I created the sophisticated data processing pipeline for real-time detection and classification of rapid optical transients, as well as data archiving infrastructure and control software for Mini-MegaTORTORA. Since 2014, I am operating the instrument as a sole observer and data scientist. Not much of a publication as of yet, except for a number of design and status update articles, as well as several publicly available online catalogues at <http://mmt.favor2.info>. There are also some GCN circulars with results of follow-up observations of Fermi gamma-ray bursts, including the upper limit for prompt optical emission of GRB 151107B and observations of bright optical flash from GRB 160625B.
- In routine optical monitoring observations of flaring stars, which I am performing together with G.Beskin on Russian 6-m telescope for last ten years using both photometric and polarimetric equipment with microsecond temporal resolution, we detected the giant flare of UV Ceti red dwarf, which contained significantly (up to 40% linear polarization) polarized spikes with sub-second duration, which we interpret as a synchrotron emission of ultrarelativistic electrons, superimposed with overall thermal flare emission. This is the first ever detection of linear polarization from flaring stars in optical range, and first direct evidence for non-thermal emission processes in their chromospheres. Result is published in PASA.
- Over last 15 years, I created a number of high speed data acquisition, archiving and analysis pipelines for different high temporal resolution astronomical detectors including several MCP-based photon counters and EMCCDs (both in use on Russian 6-m telescope inside MANIA experiment equipment) as well as Andor sCMOS detectors (for use in Mini-MegaTORTORA complex) and conventional fast CCDs with image intensifiers (for FAVOR and TORTORA cameras), all operating with sub-second temporal resolution. I also attempted characterization of these detectors, especially sCMOSes, in order to study their linearity and stability.

RESEARCH HISTORY

I started my research right after entering Moscow State University in 1997. My initial activities here, supervised by Dr. Panchenko, were related to the study of spatial distribution of merging neutron stars in galaxies and involved both numerical simulations and analytical analysis, as well as basic familiarity with population synthesis codes ("Scenario Machine" created in Sternberg Astronomical Institute). Later, under supervision of Prof. Lipunov, I studied accretion processes onto black holes from stellar wind in detached massive binaries.

Since mid-1998 I regularly visited Special Astrophysical Observatory of Russian Academy of Sciences as a trainee student, and worked under Dr. G. Beskin supervision here, which formed my general scientific interests and directions of activity. I started to work on problem of search for isolated stellar-mass black holes (which should be numerous, but still never observed directly), and specifically - on the analysis of accretion processes onto such objects. For my MSc diploma thesis in 2003 I developed a spherical accretion model with detailed treatment of magnetic field dissipation (magneto-flaring model), predicted hard x-ray emission from isolated black holes and proposed to use it as a criterion to detect such objects.

During the same years, I visited NUI Galway as a trainee several times, and worked under the supervision of Prof. Andrew Shearer. My studies here included application of wavelet-based methods of astronomical images deconvolution for reconstruction of Crab nebula structure near the Crab pulsar (2000), and creation of pulsars magnetospheres optical emission modelling code for super-computers (2002), as well as its application to the modeling of polarization of light curve of the Crab pulsar (2003).

In 2003 I became a PhD student at Special Astrophysical Observatory under supervision of Dr. G. Beskin, and started participating routine observations on 6-m telescope with different versions of panoramic photon counters in order to study rapidly variable optical objects on sub-second time scales. I also created the data analysis software for these detectors. My studies here included black hole candidates, optical pulsars (especially timing and pulse shape stability of optical emission from Crab pulsars) and flaring stars (searching for signatures of non-thermal processes in flares).

Since 2003 I participated in FAVOR project devoted to the wide-field monitoring of the night sky on sub-second time scales looking for rapid optical transients of previously unknown localization, primarily GRBs at that time. I created the algorithms and implemented the real-time data analysis and transient detection software for FAVOR camera, able to monitor 16x24 deg sky field with 7.5 frames per second temporal resolution. The camera, located near 6-m telescope, operated with varying efficiency until 2009, and provided me and my supervisor with great experience and understanding of wide-field monitoring in general, possible hardware and algorithmic solutions for it, etc.

In 2006, in collaboration with Bologna University, we created second version of wide-field monitoring camera, and installed it on top of REM robotic telescope in Chile, to be operated in parallel with routine observations of the sky. I was the responsible person for on-site camera installation and setup, and for its remote operation, and also had several maintenance and repair missions to site over the next years, as well as numerous collaboration visits to Bologna University and Merate Observatory. Remote control of TORTORA camera, as well as close interaction with host infrastructure of REM telescope and La Silla observatory in general, gave me invaluable experience in robotic observatory and instruments management.

In 2007, I defended my PhD thesis, which summarized most of my research to date, including the theory of magneto-flaring accretion, prediction of x-ray emission, as well as confirmation of expected rapid variability, from isolated black holes, details on photon counting equipment we use to look for such variability, results of observations of several isolated black hole candidates with microsecond temporal resolution looking for such variability, study of optical pulse stability of Crab pulsar, as well as details of wide-field optical monitoring looking for rapid optical transients.

Since the PhD, I continued my work as a researcher, and later senior researcher, at Special Astrophysical Observatory, Russian Academy of Sciences, following the same general directions.

In 2008, the detection of GRB080319B, brightest ever gamma-ray burst, by TORTORA camera (operated by me) simultaneously with gamma-ray telescopes marked the success of our strategy of wide-field monitoring. Since that moment, my activities shifted more towards the problems of wide-field optical monitoring, transient detection and classification, and large-scale optical surveys in general. I have been actively involved in the creation of MegaTORTORA instrument concept - FAVOR and TORTORA successor having multi-channel design and able to operate in several regimes optimized both for wide-field monitoring and narrow-field multi-regime follow-up of rapid optical transients. In 2012-2014 we, under financial support of Kazan Federal University, Russia, created 9-channel prototype variant of such instrument, Mini-MegaTORTORA, which is in active operation since then. Mini-MegaTORTORA routinely monitors the sky in a $\sim 30 \times 30$ deg field simultaneously with 0.1 s temporal resolution, detects optical transients of various kinds in real time, and performs automatic follow-up of detected rapid optical flashes, as well as of external triggers from gamma-ray and gravitational wave telescopes. I created all the software for its operation, starting from low-level data acquisition and real-time transient detection, to the autonomous observatory control system, user interfaces and data archive. Also, for the years since 2014, I routinely control its operation and data reduction, and perform data quality checking. I also supports public parts of data archive, which currently includes the databases of photometric light curves of artificial satellites, and of meteors, observed by Mini-MegaTORTORA.

My background activities currently include the population synthesis of isolated stellar mass black holes in the Galaxy taking into account contemporary models of black hole masses and kick, as well as interstellar medium. This should provide an information on possible amount of such objects in existing large-scale multiwavelength surveys, and help to formulate the criteria for selecting and locating them.

Another direction of my background activity is the statistical analysis of ensembles of different groups of compact objects - classical radio pulsars for which we found some evidences for long time scale cyclic evolution of spin down rate and proposed the method of reconstruction of parameters of both secular and cyclic components of this process, and of cosmic gamma ray bursts, for which we found several new correlations between parameters of early optical afterglows which may suggest the cosmological evolution of the medium surrounding the progenitors of gamma ray bursts.

Since 2018, I am working on establishing an astronomical detectors testing and characterization laboratory at Institute of Physics, Czech Academy of Sciences.

COMPLETE LIST OF PUBLICATIONS

ADS private library for my publications: <https://bit.ly/2S4TLOd>

- Sergey Karpov, Martin Jelinek, Jan Štrobl. Looking for fast optical bursts from FRB121102: Case study for a small telescopes with sub-second temporal resolution, *Astronomische Nachrichten*, 2019, Volume 340, Issue 7, Pages 613-617 - [doi:10.1002/asna.201913664](https://doi.org/10.1002/asna.201913664) - [arXiv](#)
- S.Karpov, G.Beskin, V.Plokhotnichenko, Yu.Shibanov, D.Zyuzin. The study of coherent optical pulsations of the millisecond pulsar PSR J1023+0038 on Russian 6-m telescope, *Astronomische Nachrichten*, 2019, Volume 340, Issue 7, Pages 607-612 - [doi:10.1002/asna.201913663](https://doi.org/10.1002/asna.201913663)
- S.Karpov, A.Bajat, A.Christov, M.Prouza. Evaluation of scientific complementary metal–oxide–semiconductor sensors for sky survey applications, *Astronomische Nachrichten*, 2019, Volume 340, Issue 7, Pages 638-645 - [doi:10.1002/asna.201913669](https://doi.org/10.1002/asna.201913669) - [arXiv](#)
- Savanov, I. S.; Naroenkov, S. A.; Nalivkin, M. A.; Dmitrienko, E. S.; Karpov, S.; Beskin, G.; Birukov, A.; Bondar, S.; Plokhotnichenko, V.; Ivanov, E.; Katkova, E.; Orekhova, N.; Perkov, A.; Sasyuk, V.; Pandey, J. C.; Karmakar, S. Photometric Activity Cycles of UX Ari, *Physics of Magnetic Stars*. ASP Conference Series, Vol. 518, Proceedings of a conference held 1-5 October, 2018 at Special Astrophysical Observatory, Nizhny Arkhyz, Russia. Edited by D.O. Kudryavtsev, I.I. Romanyuk, and I. A. Yakunin. San Francisco: Astronomical Society of the Pacific, 2019, p.191 - [WEB](#)
- Gális, R.; Merc, J.; Leedjårv, L.; Vrašťák, M.; Karpov, S. The peculiar outburst activity of the symbiotic binary AG Draconis, *Open European Journal on Variable Stars* (2019), 197, 15 - [arXiv](#) - [ADS](#)
- Antonyuk, K. A.; Valyavin, G. G.; Valeev, A. F.; Karpov, S. V.; Pit, N. V.; Aitov, V. N.; Fatkhullin, T. A.; Galazutdinov, G. A.; Tanashkin, A. S.; Antonyuk, O. I.; Ikhsanov, N. R. Search for and Study of Photometric Variability of Magnetic White Dwarfs WD 2047+372 and WD 0009+501, *Astrophysical Bulletin*, Volume 74, Issue 2, pp.172-178 - [doi:10.1134/S1990341319020056](https://doi.org/10.1134/S1990341319020056)
- Ebr, J.; Mandat, D.; Pech, M.; Chytka, L.; Jurysek, J.; Prouza, M.; Janeček, P.; Trávníček, P.; Blažek, J.; Bulik, T.; Cieslar, M.; Suchenk, M.; Rizzi, V.; Pietropaolo, E.; Iarlori, M.; Aramo, C.; Valore, L.; Di Pierro, F.; Vallania, P.; Depaoli, D. Will, M.; Gaug, M.; Font, L.; Mašek, M.; Eliášek, J.; Jelinek, M.; Karpov, S. Characterization of atmospheric Properties at the future sites of the Cherenkov Telescope Array, *Proceedings of Science*, 36th International Cosmic Ray Conference (ICRC2019), held July 24th-August 1st, 2019 in Madison, WI, U.S.A. Online at <https://pos.sissa.it/cgi-bin/reader/conf.cgi?confid=358, id.667> - [arXiv](#) - [Web](#)
- Prouza, M.; Ebr, J.; Mandat, D.; Pech, M.; Chytka, L.; Jurysek, J.; Janeček, P.; Trávníček, P.; Blažek, J.; Gaug, M.; Mašek, M.; Eliášek, J.; Karpov, S. Prototype operations of atmospheric calibration devices for the Cherenkov Telescope Array, *Proceedings of Science*, 36th International Cosmic Ray Conference (ICRC2019), held July 24th-August 1st, 2019 in Madison, WI, U.S.A. Online at <https://pos.sissa.it/cgi-bin/reader/conf.cgi?confid=358, id.769> - [arXiv](#)- [WEB](#)
- Karpov S.V., Beskin G.M., Biryukov A.V., Bondar S.F., Ivanov E.A., Katkova E.V., Orekhova N., Perkov A.V., Plokhotnichenko V.L., Sasyuk V.V., Pandey J. Observations of transient events with Mini-MegaTORTORA wide-field monitoring

system with sub-second temporal resolution, *Revista Mexicana de Astronomia y Astrofisica (Serie de Conferencias)*, 2019, 51, pp. 30-38 - [WEB](#)

- Karpov S.V., Orekhova N., Beskin G.M., Biryukov A.V., Bondar S.F., Ivanov E.A., Katkova E.V., Perkov A.V., Plokhotnichenko V.L., Sasyuk V.V. Two-station meteor observations with Mini-MegaTORTORA and FAVOR wide-field monitoring systems, *Revista Mexicana de Astronomia y Astrofisica (Serie de Conferencias)*, 2019, 51, pp. 127-130 - [WEB](#)
- Oleg Malkov, Sergey Karpov, Dana Kovaleva, Sergey Sichevsky, Dmitry Chulkov, Olga Dluzhnevskaya, Alexey Kniazev, Areg Mickaelian, Alexey Mironov, Jayant Murthy, Alexey Sytov, Gang Zhao, Aleksandr Zhukov. Verification of photometric parallaxes with Gaia DR2 data, *Galaxies*, 2019, 7, 7, 12pp - [doi:10.3390/galaxies7010007](https://doi.org/10.3390/galaxies7010007) - [WEB](#)
- Petr Janeček (for the CTA Consortium), Jan Ebr, Jakub Juryšek, Michael Prouza, Jiří Blažek, Petr Trávníček, Dušan Mandát, Miroslav Pech (for the Pierre Auger Collaboration and the CTA Consortium), Sergey Karpov, Ronan Cunniffe, Martin Mašek, Martin Jelínek, Ivana Ebrová. FRAM telescopes and their measurements of aerosol content at the Pierre Auger Observatory and at future sites of the Cherenkov Telescope Array, *EPJ Web Conf.*, 2019, Volume 197, 02008, 4pp - [doi:10.1051/epjconf/201919702008](https://doi.org/10.1051/epjconf/201919702008) - [arXiv](#)
- Ebr, Jan; Juryšek, Jakub; Prouza, Michael; Blažek, Jiří; Trávníček, Petr; Mandát, Dušan; Pech, Miroslav; Janeček, Petr; Karpov, Sergey; Cunniffe, Ronan; Mašek, Martin; Eliášek, Jiří; Jelínek, Martin; Ebrová, Ivana. New developments in aerosol measurements using stellar photometry, *EPJ Web Conf.*, 2019, Volume 197, 02007, 4pp - [doi:10.1051/epjconf/201919702007](https://doi.org/10.1051/epjconf/201919702007) [arXiv](#)

2018

- [Karpov S.V.](#), Beskin G.M., Biryukov A.V., Bondar S.F., Ivanov E.A., Katkova E.V., Orekhova N., Perkov A.V., Sasyuk V.V. Photometric calibration of a wide-field sky survey data from Mini-MegaTORTORA, *Astronomische Nachrichten*, 2018, Volume 339, Issue 5, Pages 375-381
- [Karpov S.V.](#), Cunniffe R., Ebr J., Janecek P. Testing the non-linearity of Moravian Instruments G4-16000 CCD camera, *Astronomische Nachrichten*, 2018, Volume 339, Issue 5, Pages 391-396
- Oleg Malkov, Sergey Karpov, Elena Kilpio, Sergey Sichevsky, Dmitry Chulkov, Olga Dluzhnevskaya, Dana Kovaleva, Alexei Kniazev, Areg Mickaelian, Alexey Mironov, Jayant Murthy, Alexey Sytov, Gang Zhao, Aleksandr Zhukov. Interstellar extinction from photometric surveys: application to four high-latitude areas, 2018, *Open Astronomy*, 27, 1, pp.62-69
- [S. Karpov](#), G. Beskin, A. Biryukov, S. Bondar, E. Ivanov, E. Katkova, N. Orekhova, A. Perkov, and V. Sasyuk. "Mini-MegaTORTORA wide-field monitoring system with sub-second temporal resolution: observation of transient events", in Proceedings of The International Conference "SN 1987A, Quark Phase Transition in Compact Objects and Multimessenger Astronomy", Russia, Terskol (BNO INR RAS), Nizhnij Arkhyz (SAO RAS), 2-8 July 2017, INR RAS, Moscow, pp.86-95, 2018 - [WEB](#)
- G.M. Beskin, [S.V. Karpov](#), V. L. Plokhotnichenko, Yu. A. Shibanov, D. A. Zyuzin, A.F. Kholtygin, V.V. Sokolov, Yu.V. Baryshev. "High time resolution multi-band photo-polarimetric observations of the binary millisecond redback pulsar J1023+0038 with the BTA", in Proceedings of The International Conference "SN 1987A, Quark

Phase Transition in Compact Objects and Multimessenger Astronomy”, Russia, Terskol (BNO INR RAS), Nizhnij Arkhyz (SAO RAS), 2-8 July 2017, INR RAS, Moscow, pp.24-31, 2018 - [WEB](#)

- Zhang, B.-B.; Zhang, B.; Castro-Tirado, A. J.; Dai, Z. G.; Tam, P.-H. T.; Wang, X.-Y.; Hu, Y.-D.; [Karpov, S.](#); Pozanenko, A.; Zhang, F.-W.; Mazaeva, E.; Minaev, P.; Volnova, A.; Oates, S.; Gao, H.; Wu, X.-F.; Shao, L.; Tang, Q.-W.; Beskin, G.; Biryukov, A.; Bondar, S.; Ivanov, E.; Katkova, E.; Orekhova, N.; Perkov, A.; Sasyuk, V.; Mankiewicz, L.; Żarnecki, A. F.; Cwiek, A.; Opiela, R.; Zdrożny, A.; Aptekar, R.; Frederiks, D.; Svinkin, D.; Kusakin, A.; Inasaridze, R.; Burhonov, O.; Rumyantsev, V.; Klunko, E.; Moskvitin, A.; Fatkhullin, T.; Sokolov, V. V.; Valeev, A. F.; Jeong, S.; Park, I. H.; Caballero-García, M. D.; Cunniffe, R.; Tello, J. C.; Ferrero, P.; Pandey, S. B.; Jelínek, M.; Sánchez-Ramírez, R.; Castellón, A. Transition from Fireball to Poynting-flux-dominated Outflow in Three-Episode GRB 160625B, 2018, *Nature Astronomy*, 2, 69-75 - [doi:10.1038/s41550-017-0309-8](https://doi.org/10.1038/s41550-017-0309-8)

2017

- O.Malkov, [S.Karpov](#), E.Kilpio, S.Sichevsky, D.Chulkov, O.Dluzhnevskaya, D.Kovaleva, A.Kniazev, A.Mickaelian, A.Mironov, J.Murthy, A.Sytov, G.Zhao, A.Zhukov, “Interstellar extinction from photometric surveys: application to four high-latitude areas”, 2017, **Open Astronomy**, 27
- Yu A Shibanov, G M Beskin, [S V Karpov](#), V L Plokhotnichenko, D A Zyuzin, A F Kholtygin, V V Sokolov and Yu V Baryshev, High time resolution multi-band photo-polarimetric observations of the binary millisecond redback pulsar J1023+0038 with the BTA, 2017, *Journal of Physics: Conference Series*, 932, 012027 - [doi:10.1088/1742-6596/932/1/012027](https://doi.org/10.1088/1742-6596/932/1/012027)
- A Biryukov, A Astashenok, [S Karpov](#) and G Beskin, The apparent decay of pulsar magnetic fields, 2017, *Journal of Physics: Conference Series*, 932, 012044 - [doi:10.1088/1742-6596/932/1/012044](https://doi.org/10.1088/1742-6596/932/1/012044)
- Beskin, G.; [Karpov, S.](#); Plokhotnichenko, V.; Stepanov, A.; Tsap, Yu. "Discovery of the Sub-second Linearly Polarized Spikes of Synchrotron Origin in the UV Ceti Giant Optical Flare", 2017, *PASA*, Volume 34, id.e010, 12 pp.
- Beskin G.M., [Karpov S.V.](#), Biryukov A.V., Bondar S.F., Ivanov E.A., Katkova E.V., Orekhova N., Perkov A.V., Sasyuk V.V. "Wide-field monitoring with Mini-MegaTORTORA multi-channel telescope with high temporal resolution", *Astrophysical Bulletin*, Volume 72, Issue 1, pp.81-92
- [Karpov S.V.](#), Beskin G.M., Biryukov A.V., Bondar S.F., Ivanov E.A., Katkova E.V., Orekhova N., Perkov A.V., Sasyuk V.V. "Untriggered search for rapid optical transients with Mini-MegaTORTORA wide-field monitoring system", 2017, Proceedings of IAU Symposium 324 "New Frontiers in Black Hole Astrophysics", pp. 85-86
- E. Chmyreva, G. Beskin, V. Dyachenko, [S. Karpov](#). "The search for isolated BH candidates based on kinematics of pulsars - their former companions in disrupted binaries", 2016, Proceedings of IAU Symposium 324 "New Frontiers in Black Hole Astrophysics", pp. 39-40
- [S. Karpov](#), G. Beskin, A. Biryukov, S. Bondar, E. Ivanov, E. Katkova, N. Orekhova, A. Perkov, V. Sasyuk. Mini-MegaTORTORA wide-field monitoring system with sub-second temporal resolution: observation of transient events, Proceedings of

International Conference "Stars: from collapse to collapse", *ASP Conference Series*, 2017, vol.510, p.530

- G. Beskin, A. Biryukov, S. Bondar, E. Ivanov, S. Karpov, E. Katkova, N. Orekhova, A. Perkov, V. Sasyuk. SAINT - large-scale multichannel optical telescope project, Proceedings of International Conference "Stars: from collapse to collapse", *ASP Conference Series*, 2017, vol.510, p.526
- S. Karpov, G. Beskin, A. Biryukov, S. Bondar, E. Ivanov, E. Katkova, N. Orekhova, A. Perkov, V. Sasyuk. Observations of prompt optical emission of GRB-160625B with Mini-MegaTORTORA, Proceedings of International Conference "Stars: from collapse to collapse", *ASP Conference Series*, 2017, vol.510, p.309
- G. Beskin, S. Karpov, V. Plokhotnichenko, A. Stepanov, Yu. Tsap. Polarimetric observations of flaring stars on Russian 6-m telescope, Proceedings of International Conference "Stars: from collapse to collapse", *ASP Conference Series*, 2017, vol.510, p.303
- O.V. Maryeva, E.L. Chentsov, V.P. Goranskii, V.V. Dyachenko, S.V. Karpov. On the nature of anomalous reddening of Cygnus OB2 #12 hypergiant, Proceedings of International Conference "Stars: from collapse to collapse", *ASP Conference Series*, 2017, vol.510, p.187
- Karpov S.V., Beskin G.M., Biryukov A.V., Bondar S.F., Ivanov E.A., Katkova E.V., Orekhova N., Perkov A.V., Sasyuk V.V. Observations of transient events with Mini-MegaTORTORA wide-field monitoring system with sub-second temporal resolution, *Contributions of the Astronomical Observatory Skalnaté Pleso*, 2017, v.47, No.2, pp.116-123
- L.Chmyreva, G.Beskin, and S.Karpov. Searching for isolated stellar-mass black hole candidates by analyzing the kinematics of their former companions in disrupted binary systems, *Contributions of the Astronomical Observatory Skalnaté Pleso*, 2017, v.47, No.2, pp.137-142

2016

- Maryeva, O. V.; Chentsov, E. L.; Goranskij, V. P.; Dyachenko, V. V.; Karpov, S. V.; Malogolovets, E. V.; Rastegaev, D. A. On the nature of high reddening of Cygnus OB2 #12 hypergiant, 2016, *MNRAS*, Volume 458, Issue 1, pp.491-507 - [doi: 10.1093/mnras/stw385](https://doi.org/10.1093/mnras/stw385) - [arXiv](https://arxiv.org/abs/1606.08851)
- S. Karpov, G. Beskin, A. Biryukov, S. Bondar, E. Ivanov, E. Katkova, A. Perkov, V. Sasyuk. "Mini-MegaTORTORA wide-field monitoring system with sub-second temporal resolution: observation of transient events", 2016, Proceedings of the International Workshop on Quark Phase Transition in Compact Objects and Multimessenger Astronomy: Neutrino Signals, Supernovae and Gamma-Ray Bursts, Russia, Nizhnij Arkhyz (SAO RAS), Terskol (BNO INR RAS), October, 7 - 14, 2015, Publishing house "Sneg", Pyatigorsk, pp. 43-50
- I.S. Savanov, V.I. Puzin, E.S. Dmitrienko, S.V. Karpov, G.M. Beskin, A.V. Biryukov, S.F. Bondar, E.A. Ivano, E.V. Katkova, N. Orekhova, A.V. Perkov, V.V. Sasyuk, I.I. Romanyuk, E.A. Semenko, D. Kudryavtsev, S. Karmakar, J.C. Pandey, S.B. Pandey, S. Joshi and K. Misra. "Photometric Observations of LO Peg in 2014-2015", 2016, *Acta Astronomica*, vol.66 No.3 pp.381-390
- Maryeva, O. V.; Chentsov, E. L.; Goranskij, V. P.; Karpov, S. V. "Analysis of interstellar extinction towards the hypergiant Cygnus OB2#12", 2016, *Baltic Astronomy*, Vol. 25, p. 42-48

- С.В. Карпов, Г.М. Бескин, А.В. Бирюков, С.Ф. Бондарь, Е.А. Иванов, Е.В. Каткова, Н.В. Орехова, А.В. Перков, В.В. Сасюк, "ММТ-9 - Многоканальный Мониторинговый Телескоп с субсекундным временным разрешением", 2016, сборник трудов конференции "Околоземная Астрономия-2015", стр.291-296
- Орехова Н.В., Бескин Г.М., Бирюков А.В., Бондарь С.Ф., Иванов Е.А., Карпов С.В., Каткова Е.В., Перков А.В., Сасюк В.В., Усанин В.С. "Наблюдения метеоров с системой Mini-MegaTORTORA (ММТ-9)", 2016, сборник трудов конференции "Околоземная Астрономия-2015", стр.76-82
- Каткова Е.В., Бескин Г.М., Бирюков А.В., Бондарь С.Ф., Давыдов Д.В., Иванов Е.А., Карпов С.В., Орехова Н.В., Перков А.В., Сасюк В.В., "Массовая фотометрия низкоорбитальных ИСЗ на ММТ-9", 2016, сборник трудов конференции "Околоземная Астрономия-2015", стр.261-267
- Karpov S.V., Beskin G.M., Biryukov A.V., Bondar S.F., Ivanov E.A., Katkova E.V., Perkov A.V., Sasyuk V.V. "Mini-MegaTORTORA wide-field monitoring system with sub-second temporal resolution: first year of operation", 2016, *Revista Mexicana de Astronomia y Astrofisica (Serie de Conferencias)*, v.48, pp.91-96
- Karpov S.V., Beskin G.M., Biryukov A.V., Bondar S.F., Ivanov E.A., Katkova E.V., Orekhova N., Perkov A.V., Sasyuk V.V., Usanin V. "Meteor observations with Mini-MegaTORTORA wide-field monitoring system", 2016, *Revista Mexicana de Astronomia y Astrofisica (Serie de Conferencias)*, v.48, pp.97-98 - [arXiv](#)
- Karpov S.V., Beskin G.M., Biryukov A.V., Bondar S.F., Ivanov E.A., Katkova E.V., Perkov A.V., Sasyuk V.V. "Massive photometry of low-altitude artificial satellites on Mini-MegaTORTORA", 2016, *Revista Mexicana de Astronomia y Astrofisica (Serie de Conferencias)*, v.48, pp.112-113

2015

- Biryukov, A.; Beskin, G.; Karpov, S.; Bondar, S.; Ivanov, E.; Katkova, E.; Perkov, A.; Sasyuk, V. "The first light of Mini-MegaTORTORA wide-field monitoring system", 2015, *Baltic Astronomy*, Vol. 24, p. 100-108 - [arXiv](#)
- Zakharov, A.; Mironov, A.; Biryukov, A.; Kroussanova, N.; Prokhorov, M.; Beskin, G.; Karpov, S.; Bondar, S.; Ivanov, E.; Perkov, A.; Sasyuk, V. "On the Atmospheric Extinction Reduction Procedure in Multiband Wide-Field Photometric Surveys", 2015, *Acta Astronomica*, vol 65, no 2, p. 197-204 - [arXiv](#)
- Beskin, G. M.; Oganessian, G.; Greco, G.; Karpov, S. "Statistical analysis of the parameters of gamma-ray bursts with known redshifts and peaked optical light curves", 2015, *Astrophysical Bulletin*, Volume 70, Issue 4, pp.400-413 - [arXiv](#)
- Valeev, A. F.; Antonyuk, K. A.; Pit, N. V.; Solovyev, V. Ya.; Burlakova, T. E.; Moskvitin, A. S.; Grauzhanina, A. O.; Gadelshin, D. R.; Shulyak, D.; Fatkhullin, T. A.; Galazutdinov, G. A.; Malogolovets, E. V.; Beskin, G. M.; Karpov, S. V.; Dyachenko, V. V.; Rastegaev, D. A.; Rzaev, A. Kh.; Valyavin, G. G. "Detection of regular low-amplitude photometric variability of the magnetic dwarf WD0009+501. on the possibility of photometric investigation of exoplanets on the basis of 1-meter class telescopes of the special and crimean astrophysical observatories", 2015, *Astrophysical Bulletin*, Volume 70, Issue 3, pp.318-327

2014

- Beskin, G.; Karpov, S.; Bondar, S.; Perkov, A.; Ivanov, E.; Katkova, E.; Sasyuk, V.; Biryukov, A.; Shearer, A. "Mini-MegaTORTORA status update", 2014, *Revista Mexicana de Astronomia y Astrofisica (Serie de Conferencias)*, vol.45, p.20 - [PDF](#)
- V.Sasyuk, G.Beskin, S.Karpov, S.Bondar, A.Perkov, E.Ivanov, E.Katkova, A.Shearer. "Mini-MegaTORTORA-multichannel system for wide-field optical monitoring with high temporal resolution", 2014, *Contributions of the Astronomical Observatory Skalnaté Pleso*, vol.43. p.251
- S. Karpov, G. Beskin, V. Plokhotnichenko. "Search for isolated black holes: past, present, future", 2014, *Acta Polytechnica*, 54, 271.
- Beskin G., Oganesyanyan G., Greco G., Karpov S. "Statistical properties of GRBs afterglow parameters as evidence of host galaxies cosmological evolution", *Acta Polytechnica*, 2014, 54, 269

2013

- Karpov, S.; Beskin, G.; Bondar, S.; Perkov, A.; Ivanov, E.; Guarnieri, A.; Bartolini, C.; Greco, G.; Shearer, A.; Sasyuk, V. "Status and perspectives of Mini-MegaTORTORA wide-field monitoring system with high temporal resolution", *Gamma-ray Bursts: 15 Years of GRB Afterglows*. Edited by A. J. Castro-Tirado, J. Gorosabel, and I. H. Park. *EAS Publications Series*, Volume 61, 2013, pp.465-469
- Karpov, S.; Beskin, G.; Bondar, S.; Perkov, A.; Ivanov, E.; Guarnieri, A.; Bartolini, C.; Greco, G.; Shearer, A.; Sasyuk, V. "Status and Perspectives of the Mini-MegaTORTORA Wide-field Monitoring System with High Temporal Resolution", 2013, *Acta Polytechnica*, Vol. 53, No. 3, p.38
- Бескин Г.М., Карпов С.В., Плохотниченко В.Л., Бондарь С.Ф., Перков А.В., Иванов Е.А., Каткова Е.В., Сасюк В., Шерер Э. "Широкоугольный оптический мониторинг высокого временного разрешения как способ обнаружения опасных космических объектов", 2013, Вестник РФФИ, номер 3 (79), с.34 - [URL](#)
- Beskin, G.; Oganesyanyan, G.; Greco, G.; Karpov, S. "Statistical Properties of GRB Afterglow Parameters as Evidence of Cosmological Evolution of Host Galaxies", *Gamma-ray Bursts: 15 Years of GRB Afterglows*. Edited by A. J. Castro-Tirado, J. Gorosabel, and I. H. Park. *EAS Publications Series*, Volume 61, 2013, pp.241-245
- Beskin, Grigorii; Greco, Giuseppe; Oganesyanyan, Gor; Karpov, Sergey. "On Some Statistical Properties of GRBs with Measured Redshifts Having Peaks in Optical Light Curves", 2013, *Acta Polytechnica*, Vol. 53, No. 3, p.5
- Г. Бескин, С. Карпов, В. Плохотниченко, С. Бондарь, А. Перков, Е. Иванов, Е. Каткова, В. Сасюк, Э. Шерер, "Системы широкоугольного оптического мониторинга субсекундного временного разрешения для обнаружения и исследования космических угроз", 2013, *УФН*, 187, 3, 888-894

2012

- Karpov, S.; Beskin, G.; Bondar, S.; Perkov, A.; Greco, G.; Guarnieri, A.; Bartolini, C. "Wide and fast. Status update on FAVOR project and MegaTORTORA system", 2012, *Astronomical Society of India Conference Series*, Vol. 7, p. 219
- Beskin, G.; Karpov, S.; Plokhotnichenko, V.; Bondar, S.; Ivanov, E.; Perkov, A.; Greco, G.; Guarnieri, A.; Bartolini, C. "Searching for fast optical transients by means of a wide-field monitoring observations with high temporal resolution", 2012, *Astronomical Society of India Conference Series*, Vol. 5, p. 49

- Karpov, S.; Beskin, G.; Bondar, S.; Guarnieri, A.; Bartolini, C.; Greco, G.; Piccioni, A. "Evidences of the central engine activity in the Naked-Eye Burst prompt optical emission", 2012, *Astronomical Society of India Conference Series*, Vol. 5, p. 69
- Г.Бескин, С.Карпов, "Широкоугольный оптический мониторинг высокого временного разрешения и открытие быстрой оптической переменности гамма-всплеска GRB 080319B". В кн: *Труды летней школы Фонда Дмитрия Зимина "Династия" (7-ой Школы современной астрофизики)*, гл. V, 2012, URSS, Москва, 417-442
- Biryukov, A.; Beskin, G.; Karpov, S. "Monotonic and cyclic components of radio pulsar spin-down", 2012, *MNRAS*, Volume 420, Issue 1, pp. 103-117 - [arXiv](#)

2011

- Biryukov, A. V.; Beskin, G. M.; Karpov, S. V. "Non-monotonous character of single radio pulsar spin-down", 2011, *Astronomical Bulletin*, Volume 66, Issue 4, pp.478-487
- Greco, G.; Rosa, R.; Beskin, G.; Karpov, S.; Romano, L.; Guarnieri, A.; Bartolini, C.; Bedogni, R. "Evidence of Deterministic Components in the Apparent Randomness of GRBs: Clues of a Chaotic Dynamic", 2011, *Nature Scientific Reports*, Volume 1, id. 91

2010

- Beskin, Grigory; Karpov, Sergey; Bondar, Sergey; Guarnieri, Adriano; Bartolini, Corrado; Greco, Giuseppe; Piccioni, Adalberto. "Evidences of the central engine activity in the Naked-Eye Burst prompt optical emission", 2010, DECIPHERING THE ANCIENT UNIVERSE WITH GAMMA-RAY BURSTS. *AIP Conference Proceedings*, Volume 1279, pp. 296-298
- Beskin, Grigory; Bondar, Sergey; Karpov, Sergey; Guarnieri, Adriano; Bartolini, Corrado; Greco, Giuseppe; Piccioni, Adalberto. "Wide-field monitoring strategy for the study of fast optical transients", 2010, DECIPHERING THE ANCIENT UNIVERSE WITH GAMMA-RAY BURSTS. *AIP Conference Proceedings*, Volume 1279, pp. 208-211
- Beskin, G.; Karpov, S.; Bondar, S.; Greco, G.; Guarnieri, A.; Bartolini, C.; Piccioni, A. "Fast Optical Variability of a Naked-eye Burst—Manifestation of the Periodic Activity of an Internal Engine", 2010, *ApJL*, Volume 719, Issue 1, pp. L10-L14
- Beskin, Grigory; Bondar, Sergey; Karpov, Sergey; Plokhotnichenko, Vladimir; Guarnieri, Adriano; Bartolini, Corrado; Greco, Giuseppe. "Multi-objective transforming telescope for wide-field optical monitoring of the sky with high-temporal resolution", 2010, Ground-based and Airborne Telescopes III. Edited by Stepp, Larry M.; Gilmozzi, Roberto; Hall, Helen J. *Proceedings of the SPIE*, Volume 7733, article id. 77330V, 17 pp.
- Beskin, G.; Bondar, S.; Karpov, S.; Plokhotnichenko, V.; Guarnieri, A.; Bartolini, C.; Greco, D.; Piccioni, A. "Optical transient search strategy via wide-field monitoring", 2010, *Astrophysical Bulletin*, Volume 65, Issue 3, pp.286-295
- Beskin, G.; Karpov, S.; Bondar, S.; Guarnieri, A.; Bartolini, C.; Greco, D.; Piccioni, A. "Rapid optical variability of the gamma-ray burst grb 080319b and its central engine", 2010, *Astrophysical Bulletin*, Volume 65, Issue 3, pp.223-229
- Beskin, Grigori M.; Karpov, Sergei V.; Bondar, Sergei F.; Plokhotnichenko, V. L.; Guarnieri, Adriano; Bartolini, Corrado; Greco, Giuseppe; Piccioni, Adalberto.

"Discovery of the fast optical variability of GRB 080319B and the prospects for wide-field optical monitoring with high time resolution", 2010, *Physics Uspekhi*, Volume 53, Issue 4, pp. 406-414

- Beskin, G.; Karpov, S. V.; Bondar, S.; Guarnieri, A.; Bartolini, C.; Greco, G.; Biryukov, A.. "Variability of the Naked-Eye Burst prompt optical emission as a manifestation of its central engine periodic activity.", 2010, Proceedings of the 25th Texas Symposium on Relativistic Astrophysics. December 6-10, 2010. Heidelberg, Germany. Editors: Frank M. Rieger (Chair), Christopher van Eldik and Werner Hofmann
- Greco, G.; Beskin, G.; Karpov, S.; Guarnieri, A.; Bartolini, C.; Bondar, S.; Piccioni, A.; Molinari, E.. "The High-Speed and Wide-Field TORTORA Camera: description & results", 2010, *Memorie della Società Astronomica Italiana Supplement*, v.14, p.267
- Beskin, Grigory; Bondar, Sergey; Karpov, Sergey; Plokhotnichenko, Vladimir; Guarnieri, Adriano; Bartolini, Corrado; Greco, Giuseppe; Piccioni, Adalberto; Shearer, Andrew. "From TORTORA to MegaTORTORA—Results and Prospects of Search for Fast Optical Transients", 2010, *Advances in Astronomy*, 2010, article id. 171569
- Karpov, Sergey; Beskin, Grigory; Bondar, Sergey; Guarnieri, Adriano; Bartolini, Corrado; Greco, Giuseppe; Piccioni, Adalberto. "Wide and Fast: Monitoring the Sky in Subsecond Domain with the FAVOR and TORTORA Cameras", 2010, *Advances in Astronomy*, 2010, article id. 784141
- Greco, G.; Beskin, G.; Karpov, S.; Bondar, S.; Bartolini, C.; Guarnieri, A.; Piccioni, A. "High-Speed and Wide-Field Photometry with TORTORA", 2010, *Advances in Astronomy*, 2010, article id. 268501
- Plokhotnichenko, Vladimir; Beskin, Grigory; Karpov, Sergey; Bondar, Sergey; de-Boer, Vjacheslav; Lioubetski, Alexandre; Badjin, Dmitry. "Fast Universal Spectrophotopolarimeter for Robotic Telescopes", 2010, *Advances in Astronomy*, article id. 109681

2009

- Greco, G.; Beskin, G.; Bondar, S.; Karpov, S.; Bartolini, C.; Guarnieri, A.; Piccioni, A.; Molinari, E.; Covino, S.; Guidorzi, C.; Chincarini, G. "TORTORA observations of GRB 080319B", 2009, *Memorie della Società Astronomica Italiana*, v.80, p.231
- Debur, V. G.; Beskin, G. M.; Karpov, S. V.; Plokhotnichenko, V. L.; Terekhov, A. S.; Kosolobov, S. S.; Shaibler, G. E. "High temporal resolution coordinate-sensitive detector with gallium-arsenide photocathode", 2009, *Astrophysical Bulletin*, Volume 64, Issue 4, pp.386-391
- Plokhotnichenko, V. L.; Beskin, G. M.; de Bur, V. G.; Karpov, S. V.; Bad'in, D. A.; Lyubetskaya, Z. V.; Lyubetskij, A. P.; Pavlova, V. V. "High-temporal resolution multimode photospectropolarimeter", 2009, *Astrophysical Bulletin*, Volume 64, Issue 3, pp.308-316
- P. Abolmasov, S.Karpov, T.Kotani. "Optically thick outflows of supercritical accretion discs: radiative diffusion approach", 2009, *PASJ*, v.61 no.2, pp.213-226 - [arXiv](#)

2008

- Beskin, Grigory; Karpov, Sergey; Bondar, Sergey; Greco, Giuseppe; Guarnieri, Adriano; Bartolini, Corrado; Piccioni, Adalberto; Molinari, Emilio; Chincarini,

Guido. "TORTORA discovery of Naked-Eye Burst fast optical variability", 2008 NANJING GAMMA-RAY BURST CONFERENCE. *AIP Conference Proceedings*, Volume 1065, pp. 251-254

- Racusin, J. L.; Karpov, S. V.; Sokolowski, M.; Granot, J.; Wu, X. F.; Pal'Shin, V.; Covino, S.; van der Horst, A. J.; Oates, S. R.; Schady, P.; Smith, R. J.; Cummings, J.; Starling, R. L. C.; Piotrowski, L. W.; Zhang, B.; Evans, P. A.; Holland, S. T.; Malek, K.; Page, M. T.; Vetere, L.; Margutti, R.; Guidorzi, C.; Kamble, A. P.; Curran, P. A.; Beardmore, A.; Kouveliotou, C.; Mankiewicz, L.; Melandri, A.; O'Brien, P. T.; Page, K. L.; Piran, T.; Tanvir, N. R.; Wrochna, G.; Aptekar, R. L.; Barthelmy, S.; Bartolini, C.; Beskin, G. M.; Bondar, S.; Bremer, M.; Campana, S.; Castro-Tirado, A.; Cucchiara, A.; Cwiok, M.; D'Avanzo, P.; D'Elia, V.; Della Valle, M.; de Ugarte Postigo, A.; Dominik, W.; Falcone, A.; Fiore, F.; Fox, D. B.; Frederiks, D. D.; Fruchter, A. S.; Fugazza, D.; Garrett, M. A.; Gehrels, N.; Golenetskii, S.; Gomboc, A.; Gorosabel, J.; Greco, G.; Guarnieri, A.; Immler, S.; Jelinek, M.; Kasprovicz, G.; La Parola, V.; Levan, A. J.; Mangano, V.; Mazets, E. P.; Molinari, E.; Moretti, A.; Nawrocki, K.; Oleynik, P. P.; Osborne, J. P.; Pagani, C.; Pandey, S. B.; Paragi, Z.; Perri, M.; Piccioni, A.; Ramirez-Ruiz, E.; Roming, P. W. A.; Steele, I. A.; Strom, R. G.; Testa, V.; Tosti, G.; Ulanov, M. V.; Wiersema, K.; Wijers, R. A. M. J.; Winters, J. M.; Zarnecki, A. F.; Zerbi, F.; Mészáros, P.; Chincarini, G.; Burrows, D. N. "Broadband observations of the naked-eye γ -ray burst GRB080319B", 2008, *Nature*, Volume 455, Issue 7210, pp. 183-188 - [arXiv](#)
- Greco, G.; Beskin, G.; Bad'in, D.; Karpov, S.; Bartolini, C.; Guarnieri, A. "Statistical Analysis of GRBs with Known Redshifts", 2008, 2008 NANJING GAMMA-RAY BURST CONFERENCE. *AIP Conference Proceedings*, Volume 1065, pp. 75-78
- Beskin, G.; Biryukov, A.; Karpov, S.; Plokhotnichenko, V.; Debur, V. "Observational appearances of isolated stellar-mass black hole accretion Theory and observations", 2008, *Advances in Space Research*, Volume 42, Issue 3, p. 523-532
- Beskin, Grigory; de-Bur, Vjacheslav; Karpov, Sergey; Plokhotnichenko, Vladimir; Terekhov, Aleksander; Kosolobov, Sergey; Sheibler, Heinrich; Brosch, Noah; Shearer, Andrew; Molinari, Emilio. "Panoramic detector with high time resolution on base of GaAs photocathode", High Energy, Optical, and Infrared Detectors for Astronomy III. Edited by Dorn, David A.; Holland, Andrew D. *Proceedings of the SPIE*, Volume 7021, article id. 702120, 9 pp.
- Molinari, Emilio; Beskin, Grigory; Bondar, Sergey; Karpov, Sergey; Plokhotnichenko, Vladimir; de-Bur, Vjacheslav; Greco, Guiseppe; Bartolini, Corrado; Guarnieri, Adriano; Piccioni, Adalberto. 2008, "Ground-based complex for detection and investigation of fast optical transients in wide field", Ground-based and Airborne Telescopes II. Edited by Stepp, Larry M.; Gilmozzi, Roberto. *Proceedings of the SPIE*, Volume 7012, article id. 70122S, 11 pp.
- Plokhotnichenko, Vladimir; Beskin, Grigory; de-Bur, Vjacheslav; Karpov, Sergey. 2008, "Devices and software for optical panoramic observations with microsecond time resolution", 2008, HIGH TIME RESOLUTION ASTROPHYSICS: The Universe at Sub-Second Timescales. *AIP Conference Proceedings*, Volume 984, pp. 194-201
- de-Bur, Vjacheslav; Terekhov, Alexander; Kosolobov, Sergey; Sheibler, Heinrich; Beskin, Grigory; Karpov, Sergey; Plokhotnichenko, Vladimir. "Position-Sensitive Detector with GaAs photocathode and high time resolution", 2008, HIGH TIME

RESOLUTION ASTROPHYSICS: The Universe at Sub-Second Timescales. *AIP Conference Proceedings*, Volume 984, pp. 186-193

- Beskin, Grigory; Bondar, Sergey; Ivanov, Evgeny; Karpov, Sergey; Katkova, Elena; Pozanenko, Alexei; Guarnieri, Adriano; Bartolini, Corrado; Piccioni, Adalberto; Greco, Giuseppe; Molinari, Emilio; Covino, Stefano, "Monitoring with high temporal resolution to search for optical transients in the wide field", 2008, HIGH TIME RESOLUTION ASTROPHYSICS: The Universe at Sub-Second Timescales. *AIP Conference Proceedings*, Volume 984, pp. 73-80

2007

- Beskin, G.; Debur, V.; Karpov, S.; Plokhotnichenko, V.; Biryukov, A. "Search for the event horizon by means of optical observations with high temporal resolution", 2007, Black Holes from Stars to Galaxies -- Across the Range of Masses. Edited by V. Karas and G. Matt. *Proceedings of IAU Symposium #238*, held 21-25 August, 2006 in Prague, Czech Republic. Cambridge, UK: Cambridge University Press, 2007., pp.159-163
- Karpov, Sergey; Beskin, Gregory. "Observational manifestations of accretion onto isolated black holes of different masses", Black Holes from Stars to Galaxies -- Across the Range of Masses. Edited by V. Karas and G. Matt. *Proceedings of IAU Symposium #238*, held 21-25 August, 2006 in Prague, Czech Republic. Cambridge, UK: Cambridge University Press, 2007., pp.391-392
- Beskin, G., Debur, V., Plokhotnichenko, V., Karpov, S., Biryukov, A., Pozanenko, A., Hurley, K. "Search for fast optical activity of SGR 1806-20 at the SAO RAS 6-m telescope", *ApSS*, 2007, 308, 477-479. - [arXiv](#)
- Biryukov, A., Beskin, G., Karpov, S. "On the peculiarities in the rotational frequency evolution of isolated neutron stars", *ApSS*, 2007, 308, 551-555. - [arXiv](#)
- Karpov, S., Beskin, G., Biryukov, A., Plokhotnichenko, V., Debur, V., Shearer, A. "Short time scale pulse stability of the Crab pulsar in the optical band", *ApSS*, 2007, 308, 595-599. - [arXiv](#)
- Biryukov, A., Beskin, G., Karpov, S., Chmyreva, L. "Evidence of long-term cyclic evolution of radio pulsar periods", *Advances in Space Research*, 2007, 40, 1498-1504. - [arXiv](#)
- Fabrika, S., Abolmasov, P., Karpov, S. "The supercritical accretion disk in SS433 and ultraluminous X-ray sources", *Proceedings of IAU Symposium No. 238 "Black Holes from Stars to Galaxies - Across the Range of Masses"*, held 21-25 August, 2006 in Prague, Czech Republic. Cambridge, UK: Cambridge University Press, 2007., pp.225-228. - [arXiv](#)
- Beskin G.M., Karpov S.V. *"*Low-rate accretion onto isolated stellar mass black holes*", Proceedings of the Conference "Relativistic Astrophysics and Cosmology: Einstein's Legacy", held November 7-11 , 2005, in Munich, Germany. Edited by B.Aschenbach, V.Burwitz, G.Hasinger and B.Leibundgut. Springer, 2007, pp. 144-148.

2006

- Molinari, E., Bondar, S., Karpov, S., Beskin, G., Biryukov, A., Ivanov, E., Bartolini, C., Greco, G., Guarnieri, A., Piccioni, A., Terra, F., Nanni, D., Chincarini, G., Zerbi, F.M., Covino, S., Testa, V., Tosti, G., Vitali, F., Antonelli, L.A., Conconi, P., Malaspina, G., Nicastro, L., Palazzi, E. "TORTOREM: two-telescope complex for

detection and investigation of optical transients", 2006, *Nuovo Cimento B*, vol. 121, issue 12, pp. 1525-1526

- S.Koposov, O.Bartunov, S.Karpov, "Storing and accessing the largest astronomical catalogues with the SAI CAS project", in *Highlights of Astronomy*, V.14, XXVIth IAU General Assembly, August 2006, K.A. van der Hucht, ed.
- O.C.Бартунов, А.Б.Белинский, С.В.Карпов, С.Е.Копосов, "Создание узла Виртуальной Обсерватории в ГАИШ МГУ", *"Научный сервис в сети Интернет: технологии параллельного программирования: Труды Всероссийской научной конференции"*, стр. 290-292, 2006, из-во МГУ, ISBN 5-211-05296-X
- Fabrika, S., Karpov, S., Abolmasov, P., Sholukhova, O. "Properties of SS433 and ultraluminous X-ray sources in external galaxies", Proceedings of the 230th Symposium of the International Astronomical Union "Populations of High Energy Sources in Galaxies", held in Dublin, Ireland 15-19 August 2005, Edited by E. J. A. Meurs; G. Fabbiano. Cambridge: Cambridge University Press, 2006., pp.278-281 - [arXiv](#)
- Greco. G., Bad'in, D., Beskin, G., Bartolini, C., Karpov, S., Guarnieri, A., Piccioni, A., Biryukov, A. "GRB afterglow light curves a statistical study", *Nuovo Cimento B*, vol. 121, issue 12, pp. 1487-1488, 2006 - [arXiv](#)

2005

- S. Karpov, G. Beskin, A. Biryukov, S. Bondar, K. Hurley E. Ivanov, E. Katkova, A. Pozanenko, I. Zolotukhin, "Optical camera with high temporal resolution to search for transients in the wide field", 2005, *Nuovo Cimento C*, 2005, vol. 28, issue 4, pp. 747-750 - [arXiv](#)
- G. Beskin, V. Bad'in, A. Biryukov, S. Bondar, G. Chuntunov V. Debur, E. Ivanov, S. Karpov, E. Katkova, V. Plokhotnichenko A. Pozanenko, I. Zolotukhin, K. Hurley, E. Palazzi, N. Masetti, E. Pian L. Nicastro, C. Bartolini, A. Guarnieri, A. Piccioni, P. Conconi E. Molinari, F. M. Zerbi, N. Brosch, D. Eichler, A. Shearer, J.-L. Atteia, M. Boer, "FAVOR (FAst Variability Optical Registration) - A two-telescope complex for detection and investigation of short optical transients", 2005, *Nuovo Cimento C*, vol.28, issue 4, pp. 751-754 - [arXiv](#)
- Zolotukhin, I., Biryukov, A., Beskin, G., Karpov, S., Bondar, S., Ivanov, E., Katkova, E., Hurley, K., Pozanenko, A. "Optical Camera with High Temporal Resolution to Search for Transients in a Wide Field". ADASS XIV *ASP Conference Series*, Vol. 347, Proceedings of the Conference held 24-27 October, 2004 in Pasadena, California, USA. Edited by P. Shopbell, M. Britton, and R. Ebert. San Francisco: Astronomical Society of the Pacific, p.568
- Pozanenko, A.; Loznikov, V.; Beskin, G.; Karpov, S.; Bondar, S.; Ivanov, E.; Katkova, E.; Biryukov, A.; Zolotukhin, I.; Hurley, K.; Romyantsev, V. "A Search for Prompt Optical Emission from GRBs", 2005, Proceedings of the 22nd Texas Symposium on Relativistic Astrophysics at Stanford, Stanford California, December 13-17, 2004. Edited by Pisin Chen, Elliott Bloom, Greg Madejski (SLAC), and Vahe Patrosian (Stanford University), p.558-560
- Beskin G.M., Karpov S.V. "Low-rate accretion onto isolated stellar mass black holes". *Astronomy and Astrophysics*, 2005, 440, 223-238 - [arXiv](#)
- S.N.Fabrika, P.K.Abolmasov, S.V.Karpov, O.N.Sholukhova, K.K.Ghosh. "Ultraluminous X-ray sources in galaxies - microquasars or intermediate mass black holes?", *Physics-Uspexhi*, 49, 3, pp.324-329, 2005

2004

- A. Pozanenko, G. Beskin, S. Bondar, A. Biryukov, K. Hurley, E. Ivanov, S. Karpov, V. Loznikov, V. Romyantsev, Y. Zolotukhin. "Wide Field Optical Camera for search and investigation of fast cosmic transients". Gamma-Ray Bursts: 30 Years of Discovery: Gamma-Ray Burst Symposium. *AIP Conference Proceedings*, Vol. 727, held 8-12 September, 2003 in Santa Fe, New Mexico. Edited by E. E. Fenimore and M. Galassi. Melville, NY: American Institute of Physics, 2004., p.757-760
- Pozanenko, A., Beskin, G., Bondar, S., Biryukov, A., Hurley, K., Ivanov, E., Karpov, S., Loznikov, V., Romyantsev, V., Zolotukhin, I. "A Search for prompt Gamma-Ray Burst emission with a new wide field optical camera". 35th COSPAR Scientific Assembly. Held 18 - 25 July 2004, in Paris, France., p.3996
- Biryukov, A., Beskin, G., Bondar, S., Hurley, K., Ivanov, E., Karpov, S., Katkova, E., Pozanenko, A., Zolotukhin I. "Software for detection of Optical Transients in observations with Rapid Wide-Field Camera", 2004, *Astronomische Nachrichten*, 325, 676
- Karpov, S., Bad'in, V., Beskin, G., Biryukov, A., Bondar, S., Chuntunov, G., Debur, V., Ivanov, E., Katkova, E., Plokhotnichenko, V., Pozanenko, A., Zolotukhin, I., Hurley, K., Palazzi, E., Masetti, N., Pain, E., Nicastro, L., Bartolini, C., Guarnieri, A., Piccioni, A., Brosch, N., Eichler, D., Shearer, A., Golden, A., Redfern, M., Atteia, J.-L., Boer, M. "FAVOR (FAst Variability Optical Registration) - Two-telescope Complex for Detection and Investigation of Short Optical Transients", 2004, *Astronomische Nachrichten*, 325, 677
- Zolotukhin, I., Beskin, G., Biryukov, A., Bondar, S., Hurley, K., Ivanov, E., Karpov, S., Katkova, E., Pozanenko, A. "Optical Camera with high temporal resolution to search for transients in the wide field", 2004, *Astronomische Nachrichten*, 325, 675

2002

- Karpov, S.V., Lipunov, V.M., "Why do we see so few black holes in massive binaries?", 2002, *Gravitation and Cosmology Suppl.*, 8, 178
- Beskin, G.M., Karpov S.V., "Accretion of magnetized gas onto a single stellar mass black hole", 2002, *Gravitation and Cosmology Suppl.*, 8, 182
- Beskin, G.M., Karpov, S.V., "Observational appearance of magnetic field lines reconnections in single black hole accretion flow", in *"Black Hole Astrophysics 2002"*, edited by H.K.Lee and G.-M.Park, World Scientific, 2002.
- Бескин Г.М., Карпов С.В. "Наблюдательные проявления перезамыканий магнитных силовых линий при аккреции вещества на одиночные черные дыры звездных масс". "Теоретические и прикладные проблемы современной физики. Материалы региональной научной конференции" (Ставрополь, 20-23 сентября 2002 г), 2002, 40-43

2001

- Karpov, S.V., Lipunov, V.M., "Why do we see so few black holes in massive binaries?", 2001, *Astronomy Letters*, 27, 645
- Карпов С.В., Панченко И.Е. "Пространственное распределение сливающихся двойных компактных объектов". "Астрофизика на рубеже веков", труды Всероссийской конференции, Пущино, 17-22 мая 1999 г. стр. 46-52, 2001.

