Figure 24. Word Cloud of 31 recently ranked top-tier journals that have published station science since 2003. Larger words indicate more articles published in the journal.

List of Archived Space Station Publications

Oct. 1, 2022 - Sept. 30, 2023

BIOLOGY AND BIOTECHNOLOGY

Advanced Plant EXperiments-03-1 (APEX-03-1) — Nakashima J, Pattathil S, Avci U, Chin S, Sparks JA, et al. Glycome profiling and immunohistochemistry uncover changes in cell walls of *Arabidopsis thaliana* roots during spaceflight. *npj Microgravity*. 2023 August 22; 9(1): 1-13. DOI: 10.1038/s41526-023-00312-0.

Advanced Plant EXperiment-07 (APEX-07) — Meyers AD, Land ES, Perera IY, Canaday E, Wyatt SE. Polyethersulfone (PES) membrane on agar plates as a plant growth platform for spaceflight. *Gravitational and Space Research*. 2022 January; 10(1): 30-36. DOI: 10.2478/gsr-2022-0004.*

Analysis of a Novel Sensory Mechanism in Root Phototropism (Tropi) — Hughes AM, Vandenbrink JP, Kiss JZ. Efficacy of the random positioning machine as a terrestrial analogue to microgravity in studies of seedling phototropism. *Microgravity Science and Technology*. 2023 August 14; 35(4): 43. DOI: 10.1007/s12217-023-10066-9.

BioScience-4 (STaARS BioScience-4) — Shaka S, Carpo N, Tran V, Cepeda C, Espinosa-Jeffrey A. Space microgravity alters neural stem cell division: Implications for brain cancer research on Earth and in space. *International Journal of Molecular Sciences*. 2022 November 18; 23(22): 14320. DOI: 10.3390/ijms232214320.

BioScience-4 (STaARS BioScience-4) — Tran V, Carpo N, Cepeda C, Espinosa-Jeffrey A. Oligodendrocyte progenitors display enhanced proliferation and autophagy after space flight. *Biomolecules*. 2023 February; 13(2): 201. DOI: 10.3390/biom13020201.

Biotube-Magnetophoretically Induced Curvature in Roots (Biotube-MICRO) — Hasenstein KH, Park MR, John SP, Ajala C. High-gradient magnetic fields and starch metabolism: Results from a space experiment. *Scientific Reports*. 2022 October 29; 12(1): 18256. DOI: 10.1038/s41598-022-22691-2.

Characterization of Biofilm Formation, Growth, and Gene Expression on Different Materials and Environmental Conditions in Microgravity (Space Biofilms) — Flores P, McBride SA, Galazka JM, Varanasi KK, Zea L. Biofilm formation of *Pseudomonas aeruginosa* in spaceflight is minimized on lubricant impregnated surfaces. *npj Microgravity*. 2023 August 16; 9(1): 1-14. DOI: 10.1038/s41526-023-00316-w.

Characterization of Biofilm Formation, Growth, and Gene Expression on Different Materials and Environmental Conditions in Microgravity (Space Biofilms) — Hupka M, Kedia R, Schauer R, Shepard B, Granados-Presa M, et al. Morphology of *Penicillium rubens* biofilms formed in space. *Life*. 2023 April; 13(4): 1001. DOI: 10.3390/life13041001.

Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) Space Diagnostics (Ax-1 CRISPR) — Alon DM, Mittelman K, Stibbe E, Countryman S, Stodieck LS, et al. CRISPR-based genetic diagnostics in microgravity. *Biosensors and Bioelectronics*. 2023 October 1; 237: 115479. DOI: 10.1016/j.bios.2023.115479.

Development of the On-Board Monitoring System for Microorganisms in Potable Water on Manned Spacecraft (Micro Monitor) — Ichijo T, Uchii K, Sekimoto K, Minakami T, Sugita T, et al. Bacterial bioburden and community structure of potable water used in the International Space Station. *Scientific Reports*. 2022 September 29; 12(1): 16282. DOI: 10.1038/s41598-022-19320-3.*

Determining Muscle Strength in Space-flown Caenorhabditis elegans (Micro-16) — Soni P, Anupom T, Lesanpezeshki L, Rahman M, Hewitt Jeet, al. Microfluidics-integrated spaceflight hardware for measuring muscle strength of *Caenorhabditis elegans* on the International Space Station. *npj Microgravity*. 2022 November 7; 8(1): 1-12. DOI: 10.1038/s41526-022-00241-4.

Effect of the Space Environment on the Neural Integration System and Aging of the Model Animal C. elegans (Neural Integration System / Molecular Muscle) — Kim B, Alcantara, Jr. AV, Moon J, Higashitani A, Higashitani N, et al. Comparative analysis of muscle atrophy during spaceflight, nutritional deficiency and disuse in the nematode *Caenorhabditis elegans*. *International Journal of Molecular Sciences*. 2023 August 10; 24(16): 12640. DOI: 10.3390/ijms241612640.

GeneLAB — Barker RJ, Kruse CP, Johnson CM, Saravia-Butler AM, Fogle H, et al. Meta-analysis of the space flight and microgravity response of the Arabidopsis plant transcriptome. *npj Microgravity*. 2023 March 20; 9(1): 21. DOI: 10.1038/s41526-023-00247-6.

GeneLAB — Barker RJ, Lombardino J, Rasmussen K, Gilroy S. Test of Arabidopsis space transcriptome: A discovery environment to explore multiple plant biology spaceflight experiments. *Frontiers in Plant Science*. 2020 March 4; 11: 147. DOI: 10.3389/fpls.2020.00147.*

Growth of Large, Perfect Protein Crystals for Neutron Crystallography (Perfect Crystals) — Lutz WE, Azadmanesh J, Lovelace JJ, Kolar C, Coates L, Weiss KL, et al. Perfect Crystals: Microgravity capillary counterdiffusion crystallization of human manganese superoxide dismutase for neutron crystallography. *npj Microgravity*. 2023 June 3; 9(1): 39. DOI: 10.1038/s41526-023-00288-x.

Human Muscle Contraction Response in Microgravity (Human Muscle-on-Chip) — Parafati M, Giza S, Shenoy T, Mojica-Santiago JA, Hopf M, et al. Human skeletal muscle tissue chip autonomous payload reveals changes in fiber type and metabolic gene expression due to spaceflight. *npj Microgravity*. 2023 September 15; 9(1): 77. DOI: 10.1038/s41526-023-00322-y.

International Space Station Summary of Research Performed (ISS Summary of Research) — Bauer JN, Bussen M, Wise PM, Wehland M, Schneider S, et al. Searching the literature for proteins facilitates the identification of biological processes, if advanced methods of analysis are linked: A case study on microgravity-caused changes in cells. *Expert Review of Proteomics*. 2016 June 17; 13(7): 697-705. DOI: 10.1080/14789450.2016.1197775.*

International Space Station Summary of Research Performed (ISS Summary of Research) — Corydon TJ, Schulz H, Richter P, Strauch SM, Bohmer M, et al. Current knowledge about the impact of microgravity on gene regulation. *Cells*. 2023 January; 12(7): 1043. DOI: 10.3390/cells12071043.

International Space Station Internal Environments (ISS Internal Environments / Exploration ECLSS: WPA Upgrades) — Castro CL, Velez Justiniano Y, Stahl-Rommel SE, Nguyen HN, Almengor A, et al. Genome sequences of bacteria isolated from the International Space Station water systems. *Microbiology Resource Announcements*. 2023 June 7; 12(7): e00158-23. DOI: 10.1128/mra.00158-23.

International Space Station Internal Environments (ISS Internal Environments) — Foote A, Schutz K, Zhao Z, DiGianivittorio P, Korwin-Mihavics BR, et al. Characterizing biofilm interactions between *Ralstonia insidiosa* and *Chryseobacterium gleum*. *Microbiology Spectrum*. 2023 April 13; 11(2): e0410522. DOI: 10.1128/spectrum.04105-22.

International Space Station Internal Environments (ISS Internal Environments) — Moukhamedieva L, Ozerov D, Pakhomova A. The distribution of trace contaminants in the manned space station atmosphere. *Acta Astronautica*. 2022 December; 201: 597-601. DOI: 10.1016/j.actaastro.2022.09.053.

International Space Station Internal Environments (ISS Internal Environments) — Quagliariello A, Cirigliano A, Rinaldi T. Bacilli in the International Space Station. *Microorganisms*. 2022 November 22; 10(12): 2309. DOI: **10.3390/microorganisms10122309**.

International Space Station Internal Environments (ISS Internal Environments) — Rybalchenko OV, Orlova OG, Kapustina VV, Popova EV, Kutnik IV. [Trends in formation of microbial communities by probiotic bacteria *Lactobacillus plantarum* 8PA-3 on various carriers in the space flight environment]. *Aviakosmicheskaia i Ekologicheskaia Meditsina (Aerospace and Environmental Medicine)*. 2022; 56(5): 85-95. DOI: **10.21687/0233-528X-2022-56-5-85-95**.

International Space Station Internal Environments (ISS Internal Environments) — Velez Justiniano Y, Lim CH, Dunlap DS, Sysoeva TA. Genome sequences of three common bacterial isolates from wastewater from the Water Processor Assembly at the International Space Station. *Microbiology Resource Announcements*. 2023 January 4; 12(1): e01189-22. DOI: **10.1128/mra.01189-22**.

International Space Station-Microbial Observatory of Pathogenic Viruses, Bacteria, and Fungi (ISS-MOP) Project (Microbial Tracking-2) — Simpson AC, Eedara VV, Singh NK, Damle N, Parker CW, et al. Comparative genomic analysis of *Cohnella hashimotonis* sp. nov. isolated from the International Space Station. *Frontiers in Microbiology*. 2023 June 15; 14: 1166013. DOI: **10.3389/fmicb.2023.1166013**.

International Space Station-Microbial Observatory of Pathogenic Viruses, Bacteria, and Fungi (ISS-MOP) Project / Human Exploration Research Opportunities - Differential Effects on Homozygous Twin Astronauts Associated with Differences in Exposure to Spaceflight Factors (Microbial Tracking-2 / Twins Study) — Tierney BT, Singh NK, Simpson AC, Hujer AM, Bonomo RA, et al. Multidrug-resistant *Acinetobacter pittii* is adapting to and exhibiting potential succession aboard the International Space Station. *Microbiome*. 2022 December 12; 10(1): 210. DOI: **10.1186/s40168-022-01358-0**.

International Space Station Summary of Research Performed (ISS Summary of Research) — Dawar A, Warmoota R. Influence of microgravity on the physiology, pathogenicity and antibiotic efficacy of microorganisms. *Journal for Research in Applied Sciences and Biotechnology*. 2022 December 1; 1(5): 24-35. DOI: **10.55544/jrasb.1.5.3**.

International Space Station Summary of Research Performed (ISS Summary of Research) — Ogneva IV. Single cell in a gravity field. *Life*. 2022 October; 12(10): 1601. DOI: **10.3390/life12101601**.

International Space Station Summary of Research Performed (ISS Summary of Research) — Wright H, Williams A, Wilkinson A, Harper L, Savin K, et al. An analysis of publicly available microgravity crystallization data: Emergent themes across crystal types. *Crystal Growth and Design*. 2022 October 31; 22(12): 6849-6852. DOI: **10.1021/acs.cgd.2c01056**.

List of Archived Space Station Publications

Oct. 1, 2022 - Sept. 30, 2023

Investigation of the Osteoclastic and Osteoblastic Responses to Microgravity Using Goldfish Scales / International Space Station Summary of Research Performed (Fish Scales / ISS Summary of Research) — Hirayama J, Hattori A, Takahashi A, Furusawa Y, Tabuchi Y, et al. Physiological consequences of space flight, including abnormal bone metabolism, space radiation injury, and circadian clock dysregulation: Implications of melatonin use and regulation as a countermeasure. *Journal of Pineal Research*. 2023 January; 74(1): e12834. DOI: 10.1111/jpi.12834.

Japan Aerospace Exploration Agency Protein Crystallization Growth (JAXA PCG) — Okuda-Shimazaki J, Yoshida H, Lee I, Kojima K, Suzuki N, Tsugawa W, et al. Microgravity environment grown crystal structure information based engineering of direct electron transfer type glucose dehydrogenase. *Communications Biology*. 2022 December 6; 5(1): 1-13. DOI: 10.1038/s42003-022-04286-9.

JAXA Mouse Habitat Unit — Shimizu R, Hirano I, Hasegawa A, Suzuki M, Otsuki A, et al. Nrf2 alleviates spaceflight-induced immunosuppression and thrombotic microangiopathy in mice. *Communications Biology*. 2023 August 25; 6(1): 875. DOI: 10.1038/s42003-023-05251-w.

Magnetic 3D Bioprinter — Ermolaeva SA, Parfenov VA, Karalkin PA, Khesuani YD, Domnin PA. Experimentally created magnetic force in microbiological space and on-Earth studies: Perspectives and restrictions. *Cells*. 2023 January; 12(2): 338. DOI: 10.3390/cells12020338.

MELiSSA ON board DAnish Utilisation flight (MELONDAU) — Fahrion J, Dussap C, Leys N. Assessment of batch culture conditions for cyanobacterial propagation for a bioreactor in space. *Frontiers in Astronomy and Space Sciences*. 2023 April 27; 10: 15pp. DOI: 10.3389/fspas.2023.1178332.

Microbial Tracking Payload Series (Microbial Observatory-1) — Singh NK, Wood JM, Patane J, Silva Moura LM, et al. Characterization of metagenome-assembled genomes from the International Space Station. *Microbiome*. 2023 June; 11(1): 125. DOI: 10.1186/s40168-023-01545-7.

Muscle Atrophy of Muscle Sparing in Transgenic Mice (Rodent Research-1 (CASIS)) — Vigil C, Daubenspeck A, Coia H, Smith J, Mauzy C. Matrix-assisted laser desorption/ionization analysis of the brain proteome of microgravity-exposed mice from the International Space Station. *Frontiers in Space Technologies*. 2022 November 16; 3: 971229. DOI: 10.3389/frspt.2022.971229.

Phase II Real-time Protein Crystal Growth on Board the International Space Station (RTPCG-2) — Quirk S, Lieberman RL. Structure and activity of a thermally stable mutant of *Acanthamoeba* actophorin. *Acta Crystallographica Section F: Structural Biology Communications*. 2022 April 1; 78(4): 150-160. DOI: 10.1107/S2053230X22002448.*

RNA Interference and Protein Phosphorylation in Space Environment Using the Nematode Caenorhabditis elegans (CERISE) — Zhao L, Zhang G, Tang A, Huang B, Mi D. Microgravity alters the expressions of DNA repair genes and their regulatory miRNAs in space-flown *Caenorhabditis elegans*. *Life Sciences in Space Research*. 2023 May; 37: 25-38. DOI: 10.1016/j.lssr.2023.02.002.

Rodent Research Hardware and Operations Validation (Rodent Research-1) — Veliz AL, Mamoun L, Hughes L, Vega R, Holmes B, et al. Transcriptomic effects on the mouse heart following 30 days on the International Space Station. *Biomolecules*. 2023 February; 13(2): 371. DOI: 10.3390/biom13020371.

List of Archived Space Station Publications

Oct. 1, 2022 - Sept. 30, 2023

Rodent Research Hardware and Operations Validation (Rodent Research-1) — Vitry G, Finch R, McStay G, Beheshti A, Dejean S, et al. Muscle atrophy phenotype gene expression during spaceflight is linked to a metabolic crosstalk in both the liver and the muscle in mice. *iScience*. 2022 September 24; 105213. DOI: 10.1016/j.isci.2022.105213.*

Rodent Research Hardware and Operations Validation / Effects of the Space Environment on the Blood and Lymphatic Vessels of the Head and Neck, the Knee and Hip Joints, and the Eyes / Space Flight Environment Induces Remodeling of Vascular Network and Glia-Vascular Communication in Mouse Retina (Rodent Research-1 / Rodent Research-9 / Rodent Research-18) — Baranowski RW, Braun JL, Hockey BL, Yumol JL, Geromella MS, et al. Toward countering muscle and bone loss with spaceflight: GSK3 as a potential target. *iScience*. 2023 July 21; 26(7): 107047. DOI: 10.1016/j.isci.2023.107047.

Role of Environmental Stress-responsive Transcription Factor Nrf2 in Space Stress (Mouse Habitat Unit -3 (Mouse Stress Defense)) — Han Y, Shi S, Liu S, Gu X. Effects of spaceflight on the spleen and thymus of mice: Gene pathway analysis and immune infiltration analysis. *Mathematical Biosciences and Engineering: MBE*. 2023 March 3; 20(5): 8531-8545. DOI: 10.3934/mbe.2023374.

Science for the Improvement of Future Space Exploration (ISS Exploration) — Alvarado KA, Garcia Martinez JB, Brown MM, Christodoulou X, et al. Food production in space from CO2 using microbial electrosynthesis. *Bioelectrochemistry*. 2023 February; 149: 108320. DOI: 10.1016/j.bioelechem.2022.108320.

Seedling Growth-1, 2, and 3 — Medina F, Manzano A, Herranz R, Kiss JZ. Red light enhances plant adaptation to spaceflight and Mars g-levels. Life. 2022 October; 12(10): 1484. DOI: 10.3390/life12101484.

Space Flight Environment Induces Remodeling of Vascular Network and Glia-Vascular Communication in Mouse Retina (Rodent Research-18) — Mao XW, Stanbouly S, Holley JM, Pecaut MJ, Crapo J. Evidence of spaceflight-induced adverse effects on photoreceptors and retinal function in the mouse eye. *International Journal of Molecular Sciences*. 2023 April 17; 24(8): 7362. DOI: 10.3390/ijms24087362.

Space Omics Analysis of the Skin Microbiome of Diabetic Foot Ulcers (SpaceOMIX) (Ice Cubes #9 - Project Maleth) — Gatt C, Tierney BT, Madrigal P, Mason CE, Beheshti A, et al. The Maleth program: Malta's first space mission discoveries on the microbiome of diabetic foot ulcers. *Heliyon*. 2022 December; 8(12): e12075. DOI: 10.1016/j.heliyon.2022.e12075.

Studies on gravity-controlled growth and development in plants using true microgravity conditions (Auxin Transport) — Yamazaki C, Yamazaki T, Kojima M, Takebayashi Y, Sakakibara H, et al. Comprehensive analyses of plant hormones in etiolated pea and maize seedlings grown under microgravity conditions in space: Relevance to the International Space Station experiment "Auxin Transport". *Life Sciences in Space Research*. 2023 February; 36: 138-146. DOI: 10.1016/j.lssr.2022.10.005.

Systemic Therapy of NELL-1 for Osteoporosis (Rodent Research-5) — Bedree JK, Kerns K, Chen T, Lima BP, Liu G, et al. Specific host metabolite and gut microbiome alterations are associated with bone loss during spaceflight. *Cell Reports*. 2023 May 30; 42(5): 112299. DOI: 10.1016/j.celrep.2023.112299.

Systemic Therapy of NELL-1 for Osteoporosis (Rodent Research-5) — Ha P, Kwak J, Zhang Y, Shi J, Tran L, et al. Bisphosphonate conjugation enhances the bone-specificity of NELL-1-based systemic therapy for spaceflight-induced bone loss in mice. *npj Microgravity*. 2023 September 18; 9(1): 1-15. DOI: 10.1038/s41526-023-00319-7.

Tissue Regeneration-Bone Defect (Rodent Research-4 (CASIS)) — Shishkina VV, Kostin A, Volodkin A, Samoilova V, Buchwalow I, et al. The remodeling of dermal collagen fibrous structures in mice under zero gravity: The role of mast cells. *International Journal of Molecular Sciences*. 2023 January 18; 24(3): 1939. DOI: 10.3390/ijms24031939.

Transcriptome analysis and germ-cell development analysis of mice in the space / JAXA Mouse Habitat Unit Technical Verification / JAXA Mouse Habitat Unit-5 (MHU-1 Mouse Epigenetics/ Mouse Habitat Verification / Mouse Habitat Unit - 5) — Hayashi T, Fujita R, Okada R, Hamada M, Suzuki R, et al. Lunar gravity prevents skeletal muscle atrophy but not myofiber type shift in mice. *Communications Biology*. 2023 April 21; 6(1): 424. DOI: 10.1038/s42003-023-04769-3.

Transfer of Plasmid DNA During Conjugation in Spaceflight (Plasmid) — Ilyin VC, Orlov OI, Skedina M, Korosteleva A, Molodtsova D, et al. Mathematical model of antibiotic resistance determinants' stability under space flight conditions. *Astrobiology*. 2023 March 31; 23(4): 407-414. DOI: 10.1089/ast.2022.0076.

Transfer of Plasmid DNA During Conjugation in Spaceflight (Plasmid) — Ilyin VC, Skedina M, Solovieva ZO, Artamonov A. Databases of the evolution of the microbiome and its drug susceptibility in astronauts and hermetic facility operators. *Journal of Space Safety Engineering*. 2023 June; 10(2): 161-165. DOI: 10.1016/j.jsse.2023.03.011.

Using Brachypodium distachyon to Investigate Monocot Plant Adaptation to Spaceflight (APEX-06) — Su S, Levine HG, Masson P. *Brachypodium distachyon* seedlings display accession-specific morphological and transcriptomic responses to the microgravity environment of the International Space Station. *Life*. 2023 March; 13(3): 626. DOI: 10.3390/life13030626.

Wound Healing and Sutures in Unloading Conditions (Suture In Space) — Cialdai F, Bacci S, Zizi V, Norfini A, Balsamo M, et al. Optimization of an ex-vivo human skin/vein model for long-term wound healing studies: Ground preparatory activities for the 'Suture in Space' experiment onboard the International Space Station. *International Journal of Molecular Sciences*. 2022 November 16; 23(22): 14123. DOI: 10.3390/ijms232214123.

EARTH AND SPACE SCIENCE

Alpha Magnetic Spectrometer - 02 (AMS-02) — Aguilar-Benitez M, Cavasonza LA, Ambrosi G, Arruda MF, et al. Temporal structures in electron spectra and charge sign effects in galactic cosmic rays. *Physical Review Letters*. 2023 April 17; 130(6): 161001. DOI: 10.1103/PhysRevLett.130.161001.

Alpha Magnetic Spectrometer - 02 (AMS-02) — Berdugo J, AMS-02Collaboration. AMS highlights. *37th International Cosmic Ray Conference (ICRC 2021)*, Online - Berlin, Germany; 2022 March 18. 016. DOI: 10.22323/1.395.0016.*

Alpha Magnetic Spectrometer - 02 (AMS-02) — Chang YH, AMS-02 Collaboration. Latest results from the AMS experiment. *JPS Conference Proceedings*; 2023. DOI: 10.7566/JPSCP.39.011006.

Alpha Magnetic Spectrometer - 02 (AMS-02) — Chen Y, Paniccia M, AMS-02Collaboration. Properties of iron primary cosmic rays: Results from the Alpha Magnetic Spectrometer. *37th International Cosmic Ray Conference (ICRC 2021),* Online - Berlin, Germany; 2022 March 18. 129. DOI: 10.22323/1.395.0129.*

Alpha Magnetic Spectrometer - 02 (AMS-02) — Donato F, DiMauro M, Manconi S. On the interpretation of the latest AMS-02 cosmic ray electron spectrum. *37th International Cosmic Ray Conference (ICRC 2021),* Online - Berlin, Germany; 2022 March 18. 154. DOI: 10.22323/1.395.0154.*

List of Archived Space Station Publications

Oct. 1, 2022 - Sept. 30, 2023

Alpha Magnetic Spectrometer - 02 (AMS-02) — Faldi F, Bertucci B, Tomassetti N, Vagelli V. Real-time monitoring of solar energetic particles outside the ISS with the AMS-02 instrument. *Rendiconti Lincei. Scienze Fisiche e Naturali.* 2023 June; 34: 339-345. DOI: 10.1007/s12210-023-01156-2.

Alpha Magnetic Spectrometer - 02 (AMS-02) — Korsmeier M, Cuoco A. The role of systematic uncertainties on our understanding of cosmic-ray diffusion: An analysis of AMS-02 data from lithium to oxygen. *37th International Cosmic Ray Conference (ICRC 2021),* Online - Berlin, Germany; 2022 March 18. 176. DOI: 10.22323/1.395.0176.*

Alpha Magnetic Spectrometer - 02 (AMS-02) — Liu Z, Paniccia M, Zhang C, AMS-02Collaboration. Properties of cosmic aluminum nuclei: Results from the Alpha Magnetic Spectrometer. *37th International Cosmic Ray Conference (ICRC 2021),* Online - Berlin, Germany; 2022 March 18. 110. DOI: 10.22323/1.395.0110.*

Alpha Magnetic Spectrometer - 02 (AMS-02) — Molero M, Casaus J, Mana C, VelascoFrutos MA. Anisotropy of positron and electron fluxes measured with the Alpha Magnetic Spectrometer on the ISS. *37th International Cosmic Ray Conference (ICRC 2021),* Online - Berlin, Germany; 2022 March 18. 120. DOI: 10.22323/1.395.0120.*

Alpha Magnetic Spectrometer - 02 (AMS-02) — Vagelli V, Graziani M. The AMS-02 detector on the ISS - Status and highlights after 11 years on orbit. *Journal of Physics: Conference Series*. 2023 February; 2429(1): 012002. DOI: 10.1088/1742-6596/2429/1/012002.

Alpha Magnetic Spectrometer - 02 (AMS-02) — VelascoFrutos MA, Casaus J, Mana C, Molero M. Anisotropy of protons and light primary nuclei in cosmic rays measured with the Alpha Magnetic Spectrometer on the ISS. *37th International Cosmic Ray Conference (ICRC 2021),* Online - Berlin, Germany; 2022 March 18. 108. DOI: 10.22323/1.395.0108.*

Alpha Magnetic Spectrometer - 02 (AMS-02) — Yan Q, Choutko V. Properties of heavy secondary fluorine cosmic rays results from the Alpha Magnetic Spectrometer. *37th International Cosmic Ray Conference (ICRC 2021),* Online - Berlin, Germany; 2022 March 18. 104. DOI: 10.22323/1.395.0104.*

Alpha Magnetic Spectrometer - 02 (AMS-02) — Yan Q, Choutko V. Properties of secondary cosmic ray nuclei: Eleven-year results from the Alpha Magnetic Spectrometer. *Proceedings of 38th International Cosmic Ray Conference — PoS (ICRC2023)*, Nagoya, Japan; 2023 July 25. 078. DOI: 10.22323/1.444.0078.

An Educational CubeSat Developed at the Technical University of Moldova (TUMnanoSAT) — Bostan V, Secrieru N, Ilco V, Melnic V, Martiniuc A, et al. Tumnanosat nanosatellite and Kibocube program. *2020 13th International Conference on Communications (COMM)*, Bucharest, Romania; 2020 June 18. 503-508. DOI: 10.1109/COMM48946.2020.9142025.*

Astrobiology Exposure and Micrometeoroid Capture Experiments (Tanpopo) — Kawaguchi Y, Sugino T, Tabata MJ, Okudaira K, Imai E, et al. Fluorescence imaging of microbe-containing particles shot from a two-stage Light-gas gun into an aerogel. *Origins of life and evolution of the biosphere: The Journal of the International Society for the Study of the Origin of Life*. 2014 August 3; 44: 43-60. DOI: 10.1007/s11084-014-9361-x.*

Atmosphere-Space Interactions Monitor (ASIM) — Huang A, Cummer S, Pu Y, Chanrion O, Neubert T, et al. Transition in optical and radio features during the early development of negative intracloud leader. *Geophysical Research Letters*. 2022 November 28; 49(22): e2022GL100594. DOI: 10.1029/2022GL100594.

Atmosphere-Space Interactions Monitor (ASIM) — Li D, Luque A, Lehtinen NG, Gordillo-Vasquez FJ, Neubert T, et al. Multi-pulse corona discharges in thunderclouds observed in optical and radio bands. *Geophysical Research Letters*. 2022 July 16; 49(13): e2022GL098938. DOI: 10.1029/2022GL098938.*

List of Archived Space Station Publications

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Atmosphere-Space Interactions Monitor (ASIM) — Neubert T, Gordillo-Vasquez FJ, Huntrieser H. Optical observations of thunderstorms from the International Space Station: Recent results and perspectives. *npj Microgravity*. 2023 February 4; 9(1): 12. DOI: 10.1038/s41526-023-00257-4.

Atmosphere-Space Interactions Monitor (ASIM) — Skeie CA, Ostgaard N, Mezentsev A, Bjorge-Engeland I, Marisaldi M, et al. The temporal relationship between terrestrial gamma-ray flashes and associated optical pulses from lightning. *Journal of Geophysical Research: Atmospheres.* 2022 September 16; 127(17): e2022JD037128. DOI: 10.1029/2022JD037128.*

Biofilm Inhibition On Flight Equipment and On Board the ISS Using Microbiologically Lethal Metal Surfaces (ESA-Biofilms) — Siems K, Muller D, Maertens L, Ahmed A, VanHoudt R, et al. Testing laser-structured antimicrobial surfaces under space conditions: The design of the ISS experiment BIOFILMS. *Frontiers in Space Technologies*. 2022 January 3; 2: 18pp. DOI: 10.3389/frspt.2021.773244.*

Biofilm Inhibition On Flight Equipment and On Board the ISS Using Microbiologically Lethal Metal Surfaces (ESA-Biofilms) — Siems K, Runzheimer K, Rehm A, Schwengers O, HeidlervonHeilborn D, et al. Phenotypic and genomic assessment of the potential threat of human spaceflight-relevant *Staphylococcus capitis* isolates under stress conditions. *Frontiers in Microbiology*. 2022 November 3; 13: 1007143. DOI: 10.3389/fmicb.2022.1007143.

CALorimetric Electron Telescope (CALET) — Adriani O, Akaike Y, Asano K, Asaoka Y, Berti E, et al. Charge-sign dependent cosmic-ray modulation observed with the Calorimetric Electron Telescope on the International Space Station. *Physical Review Letters*. 2023 May 25; 130(21): 211001. DOI: 10.1103/PhysRevLett.130.211001.

CALorimetric Electron Telescope (CALET) — Adriani O, Akaike Y, Asano K, Asaoka Y, Berti E, et al. Cosmic-ray boron flux measured from 8.4 GeV/n to 3.8 TeV/n with the calorimetric electron telescope on the International Space Station. *Physical Review Letters*. 2022 December 16; 129(25): 251103. DOI: 10.1103/PhysRevLett.129.251103.

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PHYSICAL SCIENCES

3D Silicon Detector Telescope / Studying the Variations of the Radiation Environment Along the Flight Path and in Compartments of the International Space Station and Time History of Dose Accumulation in a Spherical and Torso Phantoms Located Inside and Outside the Station-BUBBLE (TriTel / Matryeshka-R BUBBLE) — Lishnevskii AE, Ivanova OA, Inozemtsev KO, Hirn A, Apathy I, et al. [Monitoring radiation loads and quality factor of ionizing space radiation in the ISS service module with the use of research equipment “Tritel”]. *Aviakosmicheskaia i Ekologicheskaia Meditsina (Aerospace and Environmental Medicine)*. 2022 June 2; 56(4): 89-94. DOI: 10.21687/0233-528X-2022-56-4-89-94.*

3D Silicon Detector Telescope / Studying the Variations of the Radiation Environment Along the Flight Path and in Compartments of the International Space Station and Time History of Dose Accumulation in a Spherical and Torso Phantoms Located Inside and Outside the Station-BUBBLE (TriTel / Matryeshka-R BUBBLE) — Lishnevskii AE, Shurshakov VA, Kartashov DA. Preliminary results of data processing of the TRITEL dosimeter as part of the Matryoshka-R space experiment onboard the Russian segment of the International Space Station. *Cosmic Research*. 2023 February; 61(1): 70-79. DOI: 10.1134/S001095252322001X.

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