Stanford



Vahe Petrosian

Professor of Physics and of Applied Physics

Curriculum Vitae available Online

CONTACT INFORMATION

- **Administrative Contact**

  Dana Volponi

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Bio

BIO

How do things evolve in the universe? How are particles accelerated in the universe?

Professor Petrosian's research covers many topics in the broad area of theoretical astrophysics and cosmology, with a strong focus on high-energy astrophysical processes.

Cosmological studies deal with global properties of the universe, where the main focus is the understanding of the evolution of the universe at high redshifts, through studies of the evolutions of population of sources such as galaxies and quasars or active galactic nuclei, gamma-ray bursts, using new statistical techniques developed in collaboration with Prof. B. Efron of the Department of Statistics. Another area of research is the use of gravitational lensing in measuring mass in the universe.

High-energy astrophysics research involves interpretation of non-thermal astronomical sources where particles are accelerated to very high energies and emit various kinds of radiation. These processes occur on many scales and in all sorts of objects: in the magnetosphere of planets, in the interplanetary space, during solar and stellar flares, in the accretion disks and jets around stellar-size and super-massive black holes, at centers of galaxies, in gamma-ray bursts, in supernovae, and in the intra-cluster medium of clusters of galaxies. Plasma physics processes common in all these sources for acceleration of particles and their radiative signature is the main focus of the research here.

ACADEMIC APPOINTMENTS

- Professor, Physics
- Professor, Applied Physics

ADMINISTRATIVE APPOINTMENTS

- Teaching Assistant, Cornell University, (1961-1961)
- Research Assistant, CRSR, Cornell University, (1962-1967)
- Research Association, CRSR, Cornell University, (1967-1967)

- Research Fellow, California Institute of Technology, (1967-1969)
- Visiting Scientist, IOTA Cambridge, (1969-1969)
- Assistant Professor, Stanford University, (1969-1971)
- Associate Professor, Stanford University, (1972-1979)
- Professor, Stanford University, (1980- present)
- Iranian National Fellowship, National Iranian American Council, (1958-1962)
- Industrial Fellowship, Cornell University, (1963-1964)
- Fellowship, Alfred P. Sloan Foundation, (1972-1974)

HONORS AND AWARDS

- Foriegn Member, Armenian National Academy of Science (since 2008)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Consultant, Kitt Peak National Observatory (1971 - 1971)
- Member, Arcetri, Florence (1982 - 1983)
- Member, National Optical Astronomy Observatory (NOAO) (1982 - 1983)
- Member, Nordita, Copenhagen (1982 - 1983)
- Member, Cornell University (1982 - 1983)
- Member, Observatoire de Meudron, France (1989 - 1990)
- Member, Space Telescope Science Institute (1996 - 1996)
- Member, National Optical Astronomy Observatory (NOAO) (1998 - 1998)
- Member, Institute of Advanced Studies, Bochum University (2000 - 2000)
- Member, Eta Kappa Nu, IEEE
- Member, Tau Beta Pi, The Engineering Honor Society
- Member, Royal Astronomical Society
- Member, International Astronomical Union
- Member, American Astronomical Society

PROFESSIONAL EDUCATION

- Ph.D., Cornell University (1967)
- M.S., Cornell University (1963)
- B.E.E., Cornell University (1962)

LINKS

- ADS abstracts: https://ui.adsabs.harvard.edu/search/q=Petrosian%2C%20Vahe&sort=date%20desc%2C%20bibcode%20desc&p_=0
- arXiv astro-ph: http://www.arxiv.org/find/astro-ph/1/au:+OR+petrosian_vahe+petrosian_v/0/1/0/all/0/1

Teaching

COURSES

2026-27

- Introduction to Cosmology and Extragalactic Astrophysics: PHYSICS 161, PHYSICS 261 (Spr)

2025-26

- Introduction to Cosmology and Extragalactic Astrophysics: PHYSICS 161, PHYSICS 261 (Spr)

2024-25

- Introduction to Cosmology and Extragalactic Astrophysics: PHYSICS 161, PHYSICS 261 (Spr)

2023-24

- Introduction to Cosmology and Extragalactic Astrophysics: PHYSICS 161, PHYSICS 261 (Spr)

STANFORD ADVISEES

Doctoral Dissertation Advisor (AC)

Maya Redden

Doctoral (Program)

Jadyn Anczarski, Saul Balcarcel-Salazar, Danielle Brown, Katie Brown, Lyla Choi, Selby Dang, Hope Fu, Jhonnatan Gama Vazquez, Zach Gillis, Sanya Gupta, Abby Hartley, Chris Jia, Sadaf Kadir, Kaitlyn Karpovich, Jinwoo Kim, Gregor Krzmanc, Shenghua Liu, Mati Mebratu, Marta Nowotka, Abby Pan, Emrys Peets, Leo Sajkov, Ben Sherwin, Andreas Tsantilas, Hanyue Wang

Publications

PUBLICATIONS

- **Cosmological Evolution of Gamma-Ray Bursts** *ASTROPHYSICAL JOURNAL*
  Champati, S., Petrosian, V., Dainotti, M. G.
  2026; 1005 (1)
- **The Impact of Solar Magnetic Field Configurations on the Production of Gamma Rays at the Solar Disk** *ASTROPHYSICAL JOURNAL*
  Dorner, J., Effenberger, F., Fichtner, H., Becker Tjus, J., Jin, M., Liu, W., Petrosian, V.
  2026; 1002 (2)
- **Puzzling Variation of Gamma Rays from the Sun over the Solar Cycle Revealed with Fermi-LAT** *ASTROPHYSICAL JOURNAL LETTERS*
  Acharyya, A., Adelfio, A., Ajello, M., Baldini, L., Bartolini, C., Bastieri, D., Becerra Gonzalez, J., Bellazzini, R., Berenji, B., Bissaldi, E., Blandford, R. D., Bonino, R., Bottacini, et al
  2025; 989 (1)
- **Cosmological Evolution of Fast Radio Bursts and the Star Formation Rate** *ASTROPHYSICAL JOURNAL LETTERS*
  Champati, S., Petrosian, V.
  2025; 988 (2)
- **Gamma-ray burst redshift estimation using machine learning and the associated web app** *ASTRONOMY & ASTROPHYSICS*
  Narendra, A., Dainotti, M. G., Sarkar, M., Lenart, A. L., Bogdan, M., Pollo, A., Zhang, B., Rabeda, A., Petrosian, V., Iwasaki, K.
  2025; 698
- **GRB 221009A: The BOAT Burst that Shines in Gamma Rays** *ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES*
  Axelsson, M., Ajello, M., Arimoto, M., Baldini, L., Ballet, J., Baring, M. G., Bartolini, C., Bastieri, D., Becerra Gonzalez, J., Bellazzini, R., Berenji, B., Bissaldi, E., Blandford, et al
  2025; 277 (1)
- **Gamma-Ray Bursts as Distance Indicators by a Statistical Learning Approach** *ASTROPHYSICAL JOURNAL LETTERS*
  Dainotti, M., Narendra, A., Pollo, A., Petrosian, V., Bogdan, M., Iwasaki, K., Prochaska, J., Rinaldi, E., Zhou, D.
  2024; 967 (2)
- **Inferring the Redshift of More than 150 GRBs with a Machine-learning Ensemble Model** *ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES*
  Dainotti, M., Taira, E., Wang, E., Lehman, E., Narendra, A., Pollo, A., Madejski, G. M., Petrosian, V., Bogdan, M., Dey, A., Bhardwaj, S.
  2024; 271 (1)
- **Progenitors of Low-redshift Gamma-Ray Bursts** *ASTROPHYSICAL JOURNAL LETTERS*
  Petrosian, V., Dainotti, M. G.

2024; 963 (1)

- **A New Component from the Quiet Sun from Radio to Gamma Rays: Synchrotron Radiation by Galactic Cosmic-Ray Electrons** *ASTROPHYSICAL JOURNAL*
  Orlando, E., Petrosian, V., Strong, A.
  2023; 943 (2)
- **Transport of Cosmic-Ray Electrons from 1 au to the Sun** *ASTROPHYSICAL JOURNAL*
  Petrosian, V., Orlando, E., Strong, A.
  2023; 943 (1)
- **Can the Distance-Redshift Relation be Determined from Correlations between Luminosities?** *ASTROPHYSICAL JOURNAL LETTERS*
  Petrosian, Singal, J., Mutchnick, S.
  2022; 935 (1)
- **Incremental Fermi Large Area Telescope Fourth Source Catalog** *ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES*
  Abdollahi, S., Acero, F., Baldini, L., Ballet, J., Bastieri, D., Bellazzini, R., Berenji, B., Berretta, A., Bissaldi, E., Blandford, R. D., Bloom, E., Bonino, R., Brill, et al
  2022; 260 (2)
- **The X-Ray Luminosity Function Evolution of Quasars and the Correlation between the X-Ray and Ultraviolet Luminosities** *ASTROPHYSICAL JOURNAL*
  Singal, J., Mutchnick, S., Petrosian
  2022; 932 (2)
- **Probing Particle Acceleration through Gamma-ray Solar Flare Observations**
  Pesce-Rollins, M., Omodei, N., Petrosian, V., Longo, F.
  edited by Keilhauer, B.
  PROCEEDINGS OF SCIENCE.2022
- **Cosmological Evolution of Fermi Large Area Telescope Gamma-Ray Blazars Using Novel Nonparametric Methods** *ASTROPHYSICAL JOURNAL*
  Zeng, H., Petrosian, V., Yi, T.
  2021; 913 (2)
- **The Relation between Escape and Scattering Times of Energetic Particles in a Turbulent Magnetized Plasma: Application to Solar Flares** *ASTROPHYSICAL JOURNAL LETTERS*
  Effenberger, F., Petrosian, V.
  2018; 868 (2)
- **Probing the Puzzle of Behind-the-limb gamma-Ray Flares: Data-driven Simulations of Magnetic Connectivity and CME-driven Shock Evolution** *ASTROPHYSICAL JOURNAL*
  Jin, M., Petrosian, V., Liu, W., Nitta, N., Omodei, N., da Costa, F., Effenberger, F., Li, G., Pesce-Rollins, M., Allafort, A., Manchester, W.
  2018; 867 (2)
- **Implications of a Loop-top Origin for Microwave, Hard X-Ray, and Low-energy Gamma-Ray Emission from Behind-the-limb Flares** *ASTROPHYSICAL JOURNAL*
  Petrosian, V.
  2018; 865 (2)
- **Hard X-Ray Emission from Partially Occulted Solar Flares: RHESSI Observations in Two Solar Cycles** *ASTROPHYSICAL JOURNAL*
  Effenberger, F., Da Costa, F. R., Oka, M., Saint-Hilaire, P., Liu, W., Petrosian, V., Glesener, L., Krucker, S.
  2017; 835 (2)
- **PARTICLE ACCELERATION IN SOLAR FLARES AND ASSOCIATED CME SHOCKS** *ASTROPHYSICAL JOURNAL*
  Petrosian, V.
  2016; 830 (1)
- **DATA-DRIVEN RADIATIVE HYDRODYNAMIC MODELING OF THE 2014 MARCH 29 X1.0 SOLAR FLARE** *ASTROPHYSICAL JOURNAL*
  Da Costa, F. R., Kleint, L., Petrosian, V., Liu, W., Allred, J. C.
  2016; 827 (1)

- **THE FIRST FERMI LAT SUPERNOVA REMNANT CATALOG** *ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES*
  Acero, F., Ackermann, M., Ajello, M., Baldini, L., Ballet, J., Barbiellini, G., Bastieri, D., Bellazzini, R., Bissaldi, E., Blandford, R. D., Bloom, E. D., Bonino, R., Bottacini, et al
  2016; 224 (1)

- **Resolving the Extragalactic gamma-Ray Background above 50 GeV with the Fermi Large Area Telescope** *PHYSICAL REVIEW LETTERS*
  Ackermann, M., Ajello, M., Albert, A., Atwood, W. B., Baldini, L., Ballet, J., Barbiellini, G., Bastieri, D., Bechtol, K., Bellazzini, R., Bissaldi, E., Blandford, R. D., Bloom, et al
  2016; 116 (15)

- **Measurement of the high-energy gamma-ray emission from the Moon with the Fermi Large Area Telescope** *PHYSICAL REVIEW D*
  Ackermann, M., Ajello, M., Albert, A., Atwood, W. B., Baldini, L., Barbiellini, G., Bastieri, D., Bellazzini, R., Bissaldi, E., Blandford, R. D., Bonino, R., Bottacini, E., Bregeon, et al
  2016; 93 (8)

- **SEARCH FOR GAMMA-RAY EMISSION FROM THE COMA CLUSTER WITH SIX YEARS OF FERMI-LAT DATA** *ASTROPHYSICAL JOURNAL*
  Ackermann, M., Ajello, M., Albert, A., Atwood, W. B., Baldini, L., Ballet, J., Barbiellini, G., Bastieri, D., Bechtol, K., Bellazzini, R., Bissaldi, E., Blandford, R. D., Blooms, et al
  2016; 819 (2)

- **2FHL: THE SECOND CATALOG OF HARD FERMI-LAT SOURCES** *ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES*
  Ackermann, M., Ajello, M., Atwood, W. B., Baldini, L., Ballet, J., Barbiellini, G., Bastieri, D., Gonzalez, J. B., Bellazzini, R., Bissaldi, E., Blandford, R. D., Bloom, E. D., Bonino, et al
  2016; 222 (1)

- **MULTIWAVELENGTH EVIDENCE FOR QUASI-PERIODIC MODULATION IN THE GAMMA-RAY BLAZAR PG 1553+113** *ASTROPHYSICAL JOURNAL LETTERS*
  Ackermann, M., Ajello, M., Albert, A., Atwood, W. B., Baldini, L., Ballet, J., Barbiellini, G., Bastieri, D., Gonzalez, J. B., Bellazzini, R., Bissaldi, E., Blandford, R. D., Bloom, et al
  2015; 813 (2)

- **COMBINED MODELING OF ACCELERATION, TRANSPORT, AND HYDRODYNAMIC RESPONSE IN SOLAR FLARES. II. INCLUSION OF RADIATIVE TRANSFER WITH RADYN** *ASTROPHYSICAL JOURNAL*
  Da Costa, F. R., Liu, W., Petrosian, V., Carlsson, M.
  2015; 813 (2)

- **ACCELERATION OF THERMAL PROTONS BY GENERIC PHENOMENOLOGICAL MECHANISMS** *ASTROPHYSICAL JOURNAL*
  Petrosian, V., Kang, B.
  2015; 813 (1)

- **SEARCH FOR EXTENDED GAMMA-RAY EMISSION FROM THE VIRGO GALAXY CLUSTER WITH FERMI-LAT** *ASTROPHYSICAL JOURNAL*
  Ackermann, M., Ajello, M., Albert, A., Atwood, W. B., Baldini, L., Barbiellini, G., Bastieri, D., Bechtol, K., Bellazzini, R., Bissaldi, E., Bloom, E. D., Bonino, R., Bottacini, et al
  2015; 812 (2)

- **Luminosity-time and luminosity-luminosity correlations for GRB prompt and afterglow plateau emissions** *MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY*
  Dainotti, M., Petrosian, V., Willingale, R., O'Brien, P., Ostrowski, M., Nagataki, S.
  2015; 451 (4): 3898-3908

- **COSMOLOGICAL EVOLUTION OF LONG GAMMA-RAY BURSTS AND THE STAR FORMATION RATE** *ASTROPHYSICAL JOURNAL*
  Petrosian, V., Kitanidis, E., Kocevski, D.
  2015; 806 (1)

- **FIRST DETECTION OF > 100 MeV GAMMA-RAYS ASSOCIATED WITH A BEHIND-THE-LIMB SOLAR FLARE** *ASTROPHYSICAL JOURNAL LETTERS*
  Pesce-Rollins, M., Omodei, N., Petrosian, V., Liu, W., da Costa, F. R., Allafort, A., Chen, Q.
  2015; 805 (2)

- **SOLAR FLARE CHROMOSPHERIC LINE EMISSION: COMPARISON BETWEEN IBIS HIGH-RESOLUTION OBSERVATIONS AND RADIATIVE HYDRODYNAMIC SIMULATIONS** *ASTROPHYSICAL JOURNAL*

Da Costa, F. R., Kleint, L., Petrosian, V., Dalda, A. S., Liu, W.
2015; 804 (1)

- **THE SPECTRUM AND MORPHOLOGY OF THE FERMI BUBBLES** *ASTROPHYSICAL JOURNAL*
  Ackermann, M., Albert, A., Atwood, W. B., Baldini, L., Ballet, J., Barbiellini, G., Bastieri, D., Bellazzini, R., Bissaldi, E., Blandford, R. D., Bloom, E. D., Bottacini, E., Brandt, et al
  2014; 793 (1)

- **IMPULSIVE AND LONG DURATION HIGH-ENERGY GAMMA-RAY EMISSION FROM THE VERY BRIGHT 2012 MARCH 7 SOLAR FLARES** *ASTROPHYSICAL JOURNAL*
  Ajello, M., Albert, A., Allafort, A., Baldini, L., Barbiellini, G., Bastieri, D., Bellazzini, R., Bissaldi, E., Bonamente, E., Brandt, T. J., Bregeon, J., Brigida, M., Bruel, et al
  2014; 789 (1)

- **INJECTION OF kappa-LIKE SUPRATHERMAL PARTICLES INTO DIFFUSIVE SHOCK ACCELERATION** *ASTROPHYSICAL JOURNAL*
  Kang, H., Petrosian, V., Ryu, D., Jones, T. W.
  2014; 788 (2)

- **HIGH-ENERGY GAMMA-RAY EMISSION FROM SOLAR FLARES: SUMMARY OF FERMI LARGE AREA TELESCOPE DETECTIONS AND ANALYSIS OF TWO M-CLASS FLARES** *ASTROPHYSICAL JOURNAL*
  Ackermann, M., Ajello, M., Albert, A., Allafort, A., Baldini, L., Barbiellini, G., Bastieri, D., Bechtol, K., Bellazzini, R., Bissaldi, E., Bonamente, E., Bottacini, E., Bouvier, et al
  2014; 787 (1)

- **Determination of acceleration mechanism characteristics directly and nonparametrically from observations: Application to supernova remnants** *PHYSICAL REVIEW D*
  Petrosian, V., Chen, Q.
  2014; 89 (10)

- **GAMMA-RAY LUMINOSITY AND PHOTON INDEX EVOLUTION OF FSRQ BLAZARS AND CONTRIBUTION TO THE GAMMA-RAY BACKGROUND** *ASTROPHYSICAL JOURNAL*
  Singal, J., Ko, A., Petrosian, V.
  2014; 786 (2)

- **Fermi-LAT Observations of the Gamma-Ray Burst GRB 130427A** *SCIENCE*
  Ackermann, M., Ajello, M., Asano, K., Atwood, W. B., Axelsson, M., Baldini, L., Ballet, J., Barbiellini, G., Baring, M. G., Bastieri, D., Bechtol, K., Bellazzini, R., Bissaldi, et al
  2014; 343 (6166): 42-47

- **DETERMINATION OF STOCHASTIC ACCELERATION MODEL CHARACTERISTICS IN SOLAR FLARES** *ASTROPHYSICAL JOURNAL*
  Chen, Q., Petrosian, V.
  2013; 777 (1)

- **DETERMINATION OF THE INTRINSIC LUMINOSITY TIME CORRELATION IN THE X-RAY AFTERGLOWS OF GAMMA-RAY BURSTS** *ASTROPHYSICAL JOURNAL*
  Dainotti, M. G., Petrosian, V., Singal, J., Ostrowski, M.
  2013; 774 (2)

- **PLASMOID EJECTIONS AND LOOP CONTRACTIONS IN AN ERUPTIVE M7.7 SOLAR FLARE: EVIDENCE OF PARTICLE ACCELERATION AND HEATING IN MAGNETIC RECONNECTION OUTFLOWS** *ASTROPHYSICAL JOURNAL*
  Liu, W., Chen, Q., Petrosian, V.
  2013; 767 (2)

- **ON THE LACK OF TIME DILATION SIGNATURES IN GAMMA-RAY BURST LIGHT CURVES** *ASTROPHYSICAL JOURNAL*
  Kocevski, D., Petrosian, V.
  2013; 765 (2)

- **THE RADIO AND OPTICAL LUMINOSITY EVOLUTION OF QUASARS. II. THE SDSS SAMPLE** *ASTROPHYSICAL JOURNAL*
  Singal, J., Petrosian, V., Stawarz, L., Lawrence, A.
  2013; 764 (1)

- **Observational Aspects of Particle Acceleration in Large Solar Flares** *SPACE SCIENCE REVIEWS*
  Raymond, J. C., Krucker, S., Lin, R. P., Petrosian, V.
  2012; 173 (1-4): 197-221

- **Stochastic Acceleration by Turbulence** *SPACE SCIENCE REVIEWS*
  Petrosian, V.
  2012; 173 (1-4): 535-556

- **GeV OBSERVATIONS OF STAR-FORMING GALAXIES WITH THE FERMI LARGE AREA TELESCOPE** *ASTROPHYSICAL JOURNAL*
  Ackermann, M., Ajello, M., Allafort, A., Baldini, L., Ballet, J., Bastieri, D., Bechtol, K., Bellazzini, R., Berenji, B., Bloom, E. D., Bonamente, E., Borgland, A. W., Bouvier, et al
  2012; 755 (2)

- **FLUX AND PHOTON SPECTRAL INDEX DISTRIBUTIONS OF FERMI-LAT BLAZARS AND CONTRIBUTION TO THE EXTRAGALACTIC GAMMA-RAY BACKGROUND** *ASTROPHYSICAL JOURNAL*
  Singal, J., Petrosian, V., Ajello, M.
  2012; 753 (1)

- **IMPULSIVE PHASE CORONAL HARD X-RAY SOURCES IN AN X3.9 CLASS SOLAR FLARE** *ASTROPHYSICAL JOURNAL*
  Chen, Q., Petrosian, V.
  2012; 748 (1)

- **FERMI DETECTION OF gamma-RAY EMISSION FROM THE M2 SOFT X-RAY FLARE ON 2010 JUNE 12f** *ASTROPHYSICAL JOURNAL*
  Ackermann, M., Ajello, M., Allafort, A., Atwood, W. B., Baldini, L., Barbiellini, G., Bastieri, D., Bechtol, K., Bellazzini, R., Bhat, P. N., Blandford, R. D., Bonamente, E., Borgland, et al
  2012; 745 (2)

- **ON THE RADIO AND OPTICAL LUMINOSITY EVOLUTION OF QUASARS** *ASTROPHYSICAL JOURNAL*
  Singal, J., Petrosian, V., Lawrence, A., Stawarz, L.
  2011; 743 (2)

- **Recent Advances in Understanding Particle Acceleration Processes in Solar Flares** *SPACE SCIENCE REVIEWS*
  Zharkova, V. V., Arzner, K., Benz, A. O., Browning, P., Dauphin, C., Emslie, A. G., Fletcher, L., Kontar, E. P., Mann, G., Onofri, M., Petrosian, V., Turkmani, R., Vilmer, et al
  2011; 159 (1-4): 357-420

- **DETECTION OF A SPECTRAL BREAK IN THE EXTRA HARD COMPONENT OF GRB 090926A** *ASTROPHYSICAL JOURNAL*
  Ackermann, M., Ajello, M., Asano, K., Axelsson, M., Baldini, L., Ballet, J., Barbiellini, G., Baring, M. G., Bastieri, D., Bechtol, K., Bellazzini, R., Berenji, B., Bhat, et al
  2011; 729 (2)

- **Sources of the radio background considered** *MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY*
  Singal, J., Stawarz, L., Lawrence, A., Petrosian, V.
  2010; 409 (3): 1172-1182

- **Fermi LAT observations of cosmic-ray electrons from 7 GeV to 1 TeV** *PHYSICAL REVIEW D*
  Ackermann, M., Ajello, M., Atwood, W. B., Baldini, L., Ballet, J., Barbiellini, G., Bastieri, D., Baughman, B. M., Bechtol, K., Bellardi, F., Bellazzini, R., Belli, F., Berenji, et al
  2010; 82 (9)

- **FERMI OBSERVATIONS OF HIGH-ENERGY GAMMA-RAY EMISSION FROM GRB 090217A** *ASTROPHYSICAL JOURNAL LETTERS*
  Ackermann, M., Ajello, M., Baldini, L., Ballet, J., Barbiellini, G., Baring, M. G., Bastieri, D., Bechtol, K., Bellazzini, R., Berenji, B., Bhat, P. N., Bissaldi, E., Blandford, et al
  2010; 717 (2): L127-L132

- **GeV GAMMA-RAY FLUX UPPER LIMITS FROM CLUSTERS OF GALAXIES** *ASTROPHYSICAL JOURNAL LETTERS*
  Ackermann, M., Ajello, M., Allafort, A., Baldini, L., Ballet, J., Barbiellini, G., Bastieri, D., Bechtol, K., Bellazzini, R., Blandford, R. D., Blasi, P., Bloom, E. D., Bonamente, et al
  2010; 717 (1): L71-L78

- **THE COSMIC RADIO BACKGROUND AND JET CONNECTION** *International Meeting on High-Energy Phenomena in Relativistic Outflows II*

Singal, J., Stawarz, L., Petrosian, V., Lawrence, A.
WORLD SCIENTIFIC PUBL CO PTE LTD.2010: 965–69

- **DERIVATION OF STOCHASTIC ACCELERATION MODEL CHARACTERISTICS FOR SOLAR FLARES FROM RHESSI HARD X-RAY OBSERVATIONS** *ASTROPHYSICAL JOURNAL LETTERS*
  Petrosian, V., Chen, Q.
  2010; 712 (2): L131-L134

- **ON THE ENERGY SPECTRA OF GeV/TeV COSMIC RAY LEPTONS** *ASTROPHYSICAL JOURNAL*
  Stawarz, L., Petrosian, V., Blandford, R. D.
  2010; 710 (1): 236-247

- **IDENTIFICATION AND PROPERTIES OF THE PHOTOSPHERIC EMISSION IN GRB090902B** *ASTROPHYSICAL JOURNAL LETTERS*
  Ryde, F., Axelsson, M., Zhang, B. B., McGlynn, S., Pe'er, A., Lundman, C., Larsson, S., Battelino, M., Zhang, B., Bissaldi, E., Bregeon, J., Briggs, M. S., Chiang, et al
  2010; 709 (2): L172-L177

- **Direct Determination of Accelerated Mechanism Characteristics in Solar Flares from RHESSI Observations** *AAS*
  Petrosian, V., Chen, Q. R.
  2010; 21640403

- **FERMI OBSERVATIONS OF GRB 090902B: A DISTINCT SPECTRAL COMPONENT IN THE PROMPT AND DELAYED EMISSION** *ASTROPHYSICAL JOURNAL LETTERS*
  Abdo, A. A., Ackermann, M., Ajello, M., Asano, K., Atwood, W. B., Axelsson, M., Baldini, L., Ballet, J., Barbiellini, G., Baring, M. G., Bastieri, D., Bechtol, K., Bellazzini, et al
  2009; 706 (1): L138-L144

- **A limit on the variation of the speed of light arising from quantum gravity effects** *NATURE*
  Abdo, A. A., Ackermann, M., Ajello, M., Asano, K., Atwood, W. B., Axelsson, M., Baldini, L., Ballet, J., Barbiellini, G., Baring, M. G., Bastieri, D., Bechtol, K., Bellazzini, et al
  2009; 462 (7271): 331-334

- **COMBINED MODELING OF ACCELERATION, TRANSPORT, AND HYDRODYNAMIC RESPONSE IN SOLAR FLARES. I. THE NUMERICAL MODEL** *ASTROPHYSICAL JOURNAL*
  Liu, W., Petrosian, V., Mariska, J. T.
  2009; 702 (2): 1553-1566

- **RELATIVE DISTRIBUTIONS OF FLUENCES OF He-3 AND He-4 IN SOLAR ENERGETIC PARTICLES** *ASTROPHYSICAL JOURNAL*
  Petrosian, V., Jiang, Y. W., Liu, S., Ho, G. C., Mason, G. M.
  2009; 701 (1): 1-7

- **CASCADE AND DAMPING OF ALFVEN-CYCLOTRON FLUCTUATIONS: APPLICATION TO SOLAR WIND TURBULENCE** *ASTROPHYSICAL JOURNAL*
  Jiang, Y. W., Liu, S., Petrosian, V.
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