

Prof. ŞÖLEN BALMAN

Personal Information

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Education Information

Doctorate, University of Wisconsin-Madison, Fizik, United States Of America 1992 - 1997

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, X-ray Emission from Classical Nova in Outburst:Nova Cygni 1992 and other ROSAT detections of Novae, University Of Wisconsin-Madison, Fizik, 1997

Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 2012 - Continues

Associate Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 2005 - 2012

Associate Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 2002 - 2005

Assistant Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 1999 - 2002

Lecturer, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 1997 - 1999

Advising Theses

BALMAN Ş., Modeling selected X-ray observations of nonmagnetic cataclysmic variables using XMM-Newton and Swift observatories, Postgraduate, A.Nabizadeh(Student), 2017

BALMAN Ş., NGC 4736 ve NGC 4258 galaksilerinde belirlenen aşırı parlak X-ışın kaynaklarının zamansal ve tayfsal özelliklerinin araştırılması, Doctorate, H.AVDAN(Student), 2016

BALMAN Ş., Phase resolved spectral analysis of selected intermediate polars and the effect of warm absorbers in cataclysmic variables, Doctorate, Y.Pekön(Student), 2014

BALMAN Ş., Analysis of chandra data of the old classical nova rr pic (1925), Postgraduate, Y.Pekön(Student), 2007

BALMAN Ş., Lepton flavor violating radion decays in the Randall-Sundrum Scenario, Postgraduate, B.Korutlu(Student), 2007

BALMAN Ş., The broad-band noise characteristics of selected cataclysmic variables (CVS), anomalous x-ray pulsars (AXPS) and soft gamma repeaters (SGRS), Postgraduate, B.Külebi(Student), 2006

BALMAN Ş., Ccd photometry and time series analysis of v2275 cyg and rw umi using data from the TUBITAK national observatory, Postgraduate, M.Arda(Student), 2004

BALMAN Ş., Timing characteristics of intermediate polar type cataclysmic variables and detailed data analysis on YY

draconis., Postgraduate, E.Yazgan(Student), 2002

BALMAN Ş., Discovery of 16 new x-ray sources and monitoring the x-ray light curve of nova v382 velorum 1999, using awarded and archival data from chandra x-ray observatory., Postgraduate, A.Yoldaş(Student), 2002

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Optical Counterparts of ULXs and Their Host Environments in NGC 4490/4485**
Avdan S., AKYÜZ A., Vinokurov A., AKSAKER N., Avdan H., Fabrika S., Valeev A., AKKAYA ORALHAN I., BALMAN Ş.
ASTROPHYSICAL JOURNAL, vol.875, no.1, 2019 (SCI-Expanded)
- II. **A long serendipitous XMM-Newton observation of the intermediate polar XY Ari**
ZENGİN ÇAMURDAN D., Balman S., Burwitz V.
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY, vol.477, no.3, pp.4035-4045, 2018 (SCI-Expanded)
- III. **Modifying the Standard Disk Model for the Ultraviolet Spectral Analysis of Disk-dominated Cataclysmic Variables. I. The Novalikes MV Lyrae, BZ Camelopardalis, and V592 Cassiopeiae**
Godon P., Sion E. M., Balman S., Blair W. P.
ASTROPHYSICAL JOURNAL, vol.846, no.1, 2017 (SCI-Expanded)
- IV. **Reanalysis of high-resolution XMM-Newton data of V2491 Cygni using models of collisionally ionized hot absorbers**
Balman S., Gamsizkan C.
ASTRONOMY & ASTROPHYSICS, vol.598, 2017 (SCI-Expanded)
- V. **X-RAY SPECTRAL AND OPTICAL PROPERTIES OF A ULX IN NGC 4258 (M106)**
Avdan H., Avdan S., AKYÜZ A., Balman S., AKSAKER N., AKKAYA ORALHAN I.
ASTROPHYSICAL JOURNAL, vol.828, no.2, 2016 (SCI-Expanded)
- VI. **SWIFT X-RAY ILLESCOPE OBSERVATIONS OF THE NOVA-LIKE CATAclysmic VARIABLES MV Lyr, BZ Cam, AND V592 Cas**
BALMAN Ş., Godon P., Sion E. M.
ASTROPHYSICAL JOURNAL, vol.794, no.1, 2014 (SCI-Expanded)
- VII. **A search for periodicities from a ULX in the LINER galaxy NGC 4736**
Avdan H., Avdan S. K., AKYÜZ A., BALMAN Ş.
ASTROPHYSICS AND SPACE SCIENCE, vol.352, no.1, pp.123-128, 2014 (SCI-Expanded)
- VIII. **XMM-NEWTON OBSERVATIONS OF LUMINOUS SOURCES IN NEARBY GALAXIES NGC 4395, NGC 4736, AND NGC 4258**
AKYÜZ A., Kayaci S., Avdan H., Ozel M. E., SONBAŞ E., Balman S.
ASTRONOMICAL JOURNAL, vol.145, no.3, 2013 (SCI-Expanded)
- IX. **X-ray variations in the inner accretion flow of dwarf novae**
Balman S., Revnivtsev M.
ASTRONOMY & ASTROPHYSICS, vol.546, 2012 (SCI-Expanded)
- X. **The outburst of Nova CSS 081007:030559+054715 (HV Ceti)**
Beardmore A. P., Osborne J. P., Page K. L., Hakala P. J., Schwarz G. J., Rauch T., Balman S., Evans P. A., Goad M. R., Ness J. -, et al.
ASTRONOMY & ASTROPHYSICS, vol.545, 2012 (SCI-Expanded)
- XI. **ORBITAL-PHASE-RESOLVED SPECTROSCOPY OF THE INTERMEDIATE POLAR FO AQR USING XMM-NEWTON OBSERVATORY DATA**
Pekon Y., Balman S.
ASTRONOMICAL JOURNAL, vol.144, no.2, 2012 (SCI-Expanded)
- XII. **XMM-NEWTON OBSERVATIONS OF THE DWARF NOVA RU Peg IN QUIESCENCE: PROBE OF THE BOUNDARY LAYER**
Balman S., Godon P., Sion E. M., Ness J., Schlegel E., Barrett P. E., Szkody P.
ASTROPHYSICAL JOURNAL, vol.741, no.2, 2011 (SCI-Expanded)
- XIII. **Orbital and spin phase-resolved spectroscopy of the intermediate polar EX Hya using XMM-Newton**

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Pekon Y., Balman S.

MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY, vol.411, no.2, pp.1177-1196, 2011 (SCI-Expanded)

- XIV. **Frequency-resolved spectroscopy of XB1323-619 using XMM-Newton data: detection of a reflection region in the disc**
BALMAN Ş.
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY, vol.407, no.3, pp.1895-1902, 2010 (SCI-Expanded)
- XV. **A search for supernova remnants in the nearby spiral galaxy M74 (NGC 628)**
SONBAŞ E., AKYÜZ A., Balman S., Ozel M. E.
ASTRONOMY & ASTROPHYSICS, vol.517, 2010 (SCI-Expanded)
- XVI. **The XMM-Newton detection of extended emission from the nova remnant of T Pyxidis**
Balman S.
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY, vol.404, no.1, 2010 (SCI-Expanded)
- XVII. **Swift observations of CSS081007:030559+054715**
Beardmore A. P., Osborne J. P., Page K. L., Schwarz G., Starrfield S., Hakala P., Ness J. -, Balman S., Wagner R. M.
ASTRONOMISCHE NACHRICHTEN, vol.331, no.2, pp.156-159, 2010 (SCI-Expanded)
- XVIII. **A STUDY OF THE LOW-MASS X-RAY BINARY DIP SOURCES XB 1916-053, XB 1323-619, X 1624-490 AND 4U 1746-371 OBSERVED WITH INTEGRAL**
Balman S.
ASTRONOMICAL JOURNAL, vol.138, no.1, pp.50-62, 2009 (SCI-Expanded)
- XIX. **The broad-band noise characteristics of selected anomalous X-ray pulsars and soft gamma-ray repeaters**
Kulebi B., Balman S.
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY, vol.395, no.4, pp.2356-2362, 2009 (SCI-Expanded)
- XX. **An optical search for supernova remnants in the nearby spiral galaxy NGC 2903**
SONBAŞ E., AKYÜZ A., Balman S.
ASTRONOMY & ASTROPHYSICS, vol.493, no.3, pp.1061-1065, 2009 (SCI-Expanded)
- XXI. **Variations in the dip properties of the low-mass X-ray binary XB 1254-690 observed with XMM-Newton and INTEGRAL**
Trigo M. D., Parmar A. N., Boirin L., Motch C., Talavera A., Balman S.
ASTRONOMY & ASTROPHYSICS, vol.493, no.1, pp.145-157, 2009 (SCI-Expanded)
- XXII. **RR Pic (1925): A Chandra X-ray view**
Pekoen Y., Balman S.
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY, vol.388, no.2, pp.921-926, 2008 (SCI-Expanded)
- XXIII. **The inclination angle and mass of the black hole in XTE J1118+480**
Gelino D., Balman S., Kiziloglu U., Yilmaz A., Kalemci E., Tomsick J.
ASTROPHYSICAL JOURNAL, vol.642, no.1, pp.438-442, 2006 (SCI-Expanded)
- XXIV. **The detection of a 3.5 hr period in the classical nova Velorum 1999 (V382 Vel) and the long-term behavior of the Nova light curve**
Balman S., Retter A., Bos M.
ASTRONOMICAL JOURNAL, vol.131, no.5, pp.2628-2633, 2006 (SCI-Expanded)
- XXV. **X-ray outburst of 4U 0115+634 and ROTSE observations of its optical counterpart V635 Cas**
Baykal A., Kiziloglu U., Kiziloglu N., Balman S., Inam S.
ASTRONOMY & ASTROPHYSICS, vol.439, no.3, pp.1131-1134, 2005 (SCI-Expanded)
- XXVI. **Chandra observation of the shell of Nova Persei 1901 (GK Persei): Detection of localized nonthermal X-ray emission from a miniature supernova remnant**
Balman S.
ASTROPHYSICAL JOURNAL, vol.627, no.2, pp.933-952, 2005 (SCI-Expanded)
- XXVII. **Discovery of irradiation-induced variations in the light curve of the classical nova V2275 Cyg (N Cyg 2001 No. 2)**
Balman S., Yilmaz A., Retter A., Saygac T., Esenoglu H.

- MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY, vol.356, no.2, pp.773-777, 2005 (SCI-Expanded)
- XXVIII. **Discovery of a transient magnetar: XTE J1810-197**
Ibrahim A., Markwardt C., Swank J., Ransom S., Roberts M., Kaspi V., Woods P., Safi-Harb S., Balman S., Parke W., et al.
ASTROPHYSICAL JOURNAL, vol.609, no.1, 2004 (SCI-Expanded)
- XXIX. **A Chandra low energy transmission grating spectrometer observation of V4743 Sagittarii: A supersoft X-ray source and a violently variable light curve**
Ness J., Starrfield S., Burwitz V., Wichmann R., Hauschildt P., Drake J., Wagner R., Bond H., Krautter J., Orio M., et al.
ASTROPHYSICAL JOURNAL, vol.594, no.2, 2003 (SCI-Expanded)
- XXX. **CHANDRA detection of 16 new X-ray sources**
Yoldas A., Balman S.
ASTRONOMY & ASTROPHYSICS, vol.384, no.1, pp.190-194, 2002 (SCI-Expanded)
- XXXI. **The re-analysis of the ROSAT data of Nova Mus 1983 using white dwarf atmosphere emission models**
Balman S., Krautter J.
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY, vol.326, no.4, pp.1441-1447, 2001 (SCI-Expanded)
- XXXII. **The emission nebula associated with V1974 Cygni: a unique object?**
Casalegno R., Orio M., Mathis J., Conselice C., Gallagher J., Balman S., Della Valle M., Homeier N., Ogelman H.
ASTRONOMY & ASTROPHYSICS, vol.361, no.2, pp.725-733, 2000 (SCI-Expanded)
- XXXIII. **The first resolved and detected classical nova shell in X-rays in comparison with the ROSAT detections of hard X-ray emission from classical nova in outburst**
Balman S., Ogelman H.
BROAD BAND X-RAY SPECTRA OF COSMIC SOURCES, vol.25, pp.363-368, 2000 (SCI-Expanded)
- XXXIV. **The first resolved and detected classical nova shell in X-rays: The shell of Nova Persei 1901**
Balman S., Ogelman H.
ASTROPHYSICAL JOURNAL, vol.518, no.2, 1999 (SCI-Expanded)
- XXXV. **The X-ray spectral evolution of classical Nova V1974 Cygni 1992: A reanalysis of the ROSAT data**
Balman S., Krautter J., Ogelman H.
ASTROPHYSICAL JOURNAL, vol.499, no.1, pp.395-406, 1998 (SCI-Expanded)

Refereed Congress / Symposium Publications in Proceedings

- I. **Phase Resolved X-Ray Spectral Analysis of Intermediate Polars EX Hya and FO Aqr**
Pekon Y., Balman S.
Conference on Physics at the Magnetospheric Boundary, Geneva, Switzerland, 25 - 28 June 2013, vol.64
- II. **High Resolution XMM-Newton Data of Nova Outbursts using Warm & Hot Absorber Models**
BALMAN S., Pekon Y.
281st Symposium of the International-Astronomical-Union, Padova, Italy, 4 - 08 July 2011, pp.124-125
- III. **Frequency Resolved Spectroscopy of XB 1323-619 and EXO 0748-676**
Balman S.
International Conference on X-Ray Astronomy-2009: Present Status, Multi-Wavelength Approach and Future Perspectives, Bologna, Italy, 7 - 11 September 2009, vol.1248, pp.135-136
- IV. **Orbital Phase Resolved Spectroscopy of EX Hya Using XMM-NEWTON**
Pekon Y., Balman S.
International Conference on X-Ray Astronomy-2009: Present Status, Multi-Wavelength Approach and Future Perspectives, Bologna, Italy, 7 - 11 September 2009, vol.1248, pp.137-138
- V. **The inclination angle and mass of the black hole in XTE J1118+480**
Gelino D. M., Balman S., Kiziloglu U., Yilmaz A., Kalemci E., Tomsick J. A.
Conference on Nature and Evolution of X-Ray Binaries in Diverse Environments, Florida, United States Of America, 28 October - 02 November 2007, vol.1010, pp.82-83
- VI. **A study of selected low-mass X-ray binary dip sources observed with INTEGRAL**

- Balman S.
AIP Conference: 40 Years of Pulsars, Montreal, Canada, 12 - 17 August 2007, vol.983, pp.530-532
- VII. **The broad-band noise characteristics of selected AXPs and SGRs: Probing the magnetar coronae**
Kulebi B., Balman S.
AIP Conference: 40 Years of Pulsars, Montreal, Canada, 12 - 17 August 2007, vol.983, pp.283-285
- VIII. **Optical search for Supernova Remnants in two-spiral galaxies**
Akyuz A., Balman S., Bhattacharya D., Sonbas E., Cekmecelioglu E.
Symposium on the X-ray Universe 2005, El Escorial, Spain, 26 - 30 September 2005, vol.604, pp.441-442
- IX. **A study of temporal characteristics of selected Cataclysmic Variables: The broad-band noise structure between 2-20 keV**
Balman S., Kulebi B., Beklen E.
Symposium on the X-ray Universe 2005, El Escorial, Spain, 26 - 30 September 2005, vol.604, pp.237-238
- X. **An archival study of extended X-ray emission from classical and recurrent novae**
Balman S.
Colloquium on Spectra and Timing of Compact X-ray Binaries, Bombay, India, 17 - 21 January 2005, vol.38, pp.2840-2843
- XI. **Discovery of localized non-thermal X-ray emission from the nova remnant of GK Persei (1901)**
Balman S.
Conference on Astrophysics of Cataclysmic Variables and Related Objects, Strasbourg, France, 11 - 16 July 2004, vol.330, pp.433-434
- XII. **CCD photometry of V2275 Cygni (N Cyg 2001 No.2) in 2002-2003**
Balman S., Yilmaz A., Retter A., Saygac T., Esenoglu H.
Conference on Astrophysics of Cataclysmic Variables and Related Objects, Strasbourg, France, 11 - 16 July 2004, vol.330, pp.431-432
- XIII. **The CHANDRA data of the classical nova RR Pic (1925): A possible magnetic cataclysmic variable candidate**
Balman S., Kupcu-Yoldas A.
IAU Colloquium 190 Workshop on Magnetic Cataclysmic Variables, Cape-Town, South Africa, 8 - 13 December 2002, vol.315, pp.172-173
- XIV. **On the possibility of detecting remnants of novae in the X-rays and recovering the remains of an explosion after a century**
Balman S.
International Conference on Classical Nova Explosions, SITGES, Spain, 20 - 24 May 2002, vol.637, pp.365-371
- XV. **The CHANDRA observation of the first resolved and detected classical nova shell in X-rays: The shell of Nova Persei 1901 (GK Per)**
Balman S.
X-Ray Astronomy 2000 Conference, MONDELLO, Italy, 4 - 09 September 2000, vol.234, pp.269-274
- XVI. **Application of the hot white dwarf atmosphere models to the X-ray data of classical novae**
Balman S.
Conference of the NATO-Advanced-Study-Institute on Variable Stars as Essential Astrophysical Tools, CESME, Turkey, 31 August - 10 September 1998, vol.544, pp.773-782

Supported Projects

BAYKAL A., BALMAN Ş., Project Supported by Higher Education Institutions, Bayes İstatistik Tekniğiyle Pulsarların ve Beyaz Cücelerin Güç Spektrumlarının Oluşturulması, 2016 - 2016

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