

PANAYIOTIS TZANAVARIS

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EDUCATION

University of Cambridge, Institute of Astronomy and Churchill College

Ph.D., *Astrophysics*, 2003:

Thesis: Properties of protogalactic gas from high-resolution spectroscopy of APM 08 27+5255

Supervisor: R. F. Carswell

University of London (UK), Kings College

M.Sci., *Physics*, 1997: First Class (Honours)

Thesis: Properties of a Quantum Gas

Supervisor: G. S. Joyce

RESEARCH INTERESTS

- Compact groups of galaxies
- X-ray binary populations and physical processes in galaxies
- Star formation and its evolution in galaxies

RESEARCH EMPLOYMENT

- 2007 –** NASA/Goddard Space Flight Center, Greenbelt, MD
Astrophysics Research Contractor, Astrophysics Science Division
- 2009 – 2012** **NPP Fellow:** NASA/Goddard Space Flight Center, Greenbelt, MD
- 2005 – 2007** **Research Associate:** Institute of Astronomy and Astrophysics,
National Observatory of Athens, Greece
- 2003 – 2005** **Research Associate:** School of Physics, The University of New South Wales,
Sydney, Australia

RECENT AWARDS

- 2009 – 2012** **NASA Post-doctoral Fellowship**

SUCCESSFUL OBSERVING, GRANT AND COMPUTATIONAL PROPOSALS

- **Co-I**, *Chandra*, Cycle 15, archival, \$60K, *Hot gas and binary production in the earlier universe: X-ray emission from galaxies in isolated compact groups* (2013)
- **PI**, *Swift*, Cycle 7, 315 ks, \$15K, (*second longest observing time awarded in cycle*): *The evolution of star formation in compact groups of galaxies* (2010)
- **PI**, NASA Center for Computational Sciences (NCCS), 750,080 processor hours on Linux cluster “Discover”, proposal SMD-11-2245/s1029: *X-ray binary formation and evolution on cosmological timescales* (2011)
- **PI**, NASA Center for Computational Sciences (NCCS), 420,000 processor hours on Linux cluster “Discover”, proposal SMD-10-1536/s1029: *X-ray binary formation and evolution on cosmological timescales* (2010)

- Co-I, NASA Astrophysics Data Analysis Project, 09-ADP09-0071, \$686K, FY10-FY14: *Accreting binary populations from billions of years ago to the year 2035* (2009)
- **PI**, 2 nights multi-fiber spectroscopy at Cerro Tololo, Chile: *Groups around groups: Multi-object spectroscopy of Hickson Compact Groups* (2009A)
- Co-I, 6+6 nights multi-fiber spectroscopy at Cerro Tololo, Chile: *Groups around groups: Multi-object spectroscopy of Hickson Compact Groups* (2008B, 2009B)
- **PI**, 7 nights long-slit spectroscopy at Siding Spring observatory, Australia: *X-ray selected normal galaxies: towards a new large sample* (2006C)

COLLOQUIA AND RESEARCH TALKS (recent)

Seminar, National Observatory of Athens, Greece (7/2014)
 Conference Talk, X-ray View of Galaxy Ecosystems (7/2014)
 Conference Talk, American Astronomical Society (1/2014)
 Seminar, IATE/University of Cordoba, Argentina (12/2013)
 HotSci Talk, Space Telescope Science Institute (6/2013)
 Conference Talk, Half a Century of X-ray Astronomy (9/2012)
 Conference Talk, Exploring the Nature of the Evolving Universe (7/2012)
 Conference Talk, Star formation and gas reservoirs in nearby groups and clusters (7/2012)
 Seminar, University of Maryland Baltimore County (3/2012)
 Conference Talk, High Energy Views of Galaxies and their Nuclei (11/2011)
 Conference Talk, High Energy Astrophysics Division Meeting (9/2011)

PROFESSIONAL SERVICE

Referee	A&A, ApJ, ApJ Letters
Peer review	<i>Chandra</i> cycle 16
Reviewer	Handbook of X-ray Astronomy (K. Arnaud, R. Smith, A. Siemiginowska, eds)
Author	CTIO/Hydra observing set-up software
Author	Long-slit spectroscopy reduction software
Outreach	Member of NASA/Goddard's team "Ask an Astrophysicist"

TEACHING AND MENTORING EXPERIENCE

- Lecturer, General Physics II (electromagnetism), Montgomery College, MD *Fall 2013, 2014*)
- Lecturer, General Physics I (mechanics & thermodynamics, studio format course), Montgomery College, MD (*Summer 2013*)
- Lecturer, Astronomy 101, Montgomery College, MD (*Spring 2013, 2014*)
- Supervised University of Western Ontario *undergraduate* Laura Lenkic (UV+IR data reduction and analysis, star formation rates, 2012 - , ongoing)
- Supervised University of Maryland *undergraduate* Kalman Knizhnik on X-ray astronomy data reduction and analysis (2008 - 2009, *1.5 years*)
- Supervised M.Sc. data analyst Gladys Kober on optical astronomy data reduction, catalog preparation, observing preparation, and during observing trip (2009 - *1 year*)
- Supervised NASA/GSFC summer intern *undergraduate* John Sheets on optical data reduction and observing catalog preparation (2008 - *2 months*)
- Supervised University of Western Ontario *graduate* student Draco Szathmary on observing catalog preparation before and during observing trip (2008 - *2 weeks*)
- Supervised Penn State University *graduate* student Jason Young during observing trip (2008 - *1 week*)
- Supervisor of three students for Swinburne University's *Astronomy online* course (2007 - *1 semester*)

- Supervisor at the 10th and 11th Summer School of the National Observatory of Athens for *advanced secondary school* students (2005, 2006)
- *Mathematics for Natural Sciences Tutorials*: University of Cambridge (1998 - 1 year)
- *Mathematics for Physical Sciences Tutorials*: University of London (1996 - 1 year)

OBSERVING EXPERIENCE

- Cerro Tololo 4m (Chile): 2+7 nights, Hydra (multi-fiber spectrograph) (2009)
- Las Campanas 2.5m (Chile): 5 nights, WFCCD (wide field imager) (2008)
- Centro Astronómico Hispano-Alemán 3.6m (Spain): 2 nights, TWIN (optical spectrograph) (2006)
- Siding Spring 2.3m (Australia): 5 nights, DBS (optical spectrograph) (2004)
- Isaac Newton 2.5m (Spain): 6 nights, WFC (wide field imager) (2001)

PROFESSIONAL AFFILIATIONS

- Member of the American Astronomical Society (2008 - present)
- Member of the American Astronomical Society's High Energy Astrophysics Division (2008 - present)
- Member of the Institute of Physics, UK (1993 - present)
- Fellow of the Royal Astronomical Society, UK (1997 - present)
- Member of the Hellenic Astronomical Society (2005 - present)
- Member of the International Astronomical Union (2012 - present)

OTHER EXPERIENCE

- Worked as lawyer (1988 - 1990, Athens, Greece; LL. B., University of Athens)
- Greek Army (1/1990 - 9/1991, sergeant)
- Proficient pianist (Degree in Music, National Conservatory of Athens, Greece)
- Excellent command of five languages (Greek, English, French, German, Spanish)

PUBLICATIONS (selected)

28	refereed publications
9	first-author publications
174	citations to first-author publications
665	total citations to publications

Refereed Journal Articles (selected)

- Desjardins, T. D., [. . .], **Tzanavaris, P.** *ApJ*
Some Like It Hot: Linking Diffuse X-ray Luminosity, Baryonic Mass, and Star Formation Rate in Compact Groups of Galaxies
- Tzanavaris, P.**, Gallagher, S. C., Hornschemeier, A. E., et al., 2014, *ApJS*, **212**, 9
A Chandra-Swift View of Point Sources in Hickson Compact Groups: High AGN Fraction but a Dearth of Strong AGNs
- Walker, L. M., Butterfield, N. , [. . .], **Tzanavaris, P.** et al., 2013, *ApJ*, **775**, 129
The Optical Green Valley versus Mid-infrared Canyon in Compact Groups
- Tzanavaris, P.**, Fragos, T., Tremmel, M., Jenkins, L., et al., 2013, *ApJ*, **774**, 136
Modeling X-ray binary evolution in normal galaxies: Insights from SINGS

24. Tremmel, M., Fragos, T., Lehmer, B.D., **Tzanavaris, P.**, et al., 2013, *ApJ*, **766**, 19
Modeling the Redshift Evolution of the Normal Galaxy X-ray Luminosity Function
23. Fragos, T., Lehmer, B.D., Tremmel M., **Tzanavaris, P.**, et al., 2013, *ApJ*, **764**, 41
X-ray Binary Evolution Across Cosmic Time
22. Desjardins, T. D.; Gallagher, S. C.; **Tzanavaris, P.**, et al., 2012, *ApJ*, **763**, 121
Intragroup and Galaxy-Linked Diffuse X-ray Emission in Hickson Compact Groups
21. Konstantopoulos, I. S.; Gallagher, S. C.; Fedotov, K.; Durrell, P. R.; **Tzanavaris, P.**, et al., 2012, *ApJ*, **745**, 30
The merger history, AGN and dwarf galaxies of Hickson Compact Group 59
20. Konstantopoulos, I. S., Gallagher, S. C., Fedotov, K., Durrell, P. R., Heiderman, A., Elmegreen, D. M., Charlton, J. C., Hibbard, J. E., **Tzanavaris, P.**, et al., 2010, *ApJ*, **723**, 197
Galaxy Evolution in a Complex Environment: A Multi-wavelength Study of HCG 7
19. Walker, L. M., Johnson, K. E., Gallagher, S. C., Hibbard, J. E., Hornschemeier, A. E., **Tzanavaris, P.**, et al., 2010, *AJ*, **140**, 1254
Mid-infrared Evidence for Accelerated Evolution in Compact Group Galaxies
18. **Tzanavaris, P.**, Hornschemeier, A. E., Gallagher, S. C., Johnson, K. E., Gronwall, C., Immler, S., Reines, A. E., Hoversten, E., & Charlton, J. C. 2010, *ApJ*, **716**, 556
Ultraviolet+Infrared Star Formation Rates: Hickson Compact Groups with Swift and Spitzer
17. Curran, S. J., **Tzanavaris, P.**, Darling, J. K., Whiting, M. T., Webb, J. K., Bignell, C., Athreya, R., & Murphy, M. T. 2010, *MNRAS*, **402**, 35
New searches for HI 21 cm in damped Lyman α absorption systems
16. Gallagher, S. C., Durrell, P. R., Elmegreen, [...] **Tzanavaris, P.**, et al. 2010, *AJ*, **139**, 545
Hierarchical Structure Formation and Modes of Star Formation in Hickson Compact Group 31
15. Rovilos, E., Georgantopoulos, I., **Tzanavaris, P.**, Pracy, M., Whiting, M., Woods, D., & Goudis, C. 2009, *A&A*, **502**, 85
Normal galaxies in the XMM-Newton fields. X-rays as a star formation indicator
14. **Tzanavaris, P.** & Georgantopoulos, I. 2008, *A&A*, **480**, 663
The galaxy luminosity function and its evolution with Chandra
13. Curran, S. J., **Tzanavaris, P.**, Pihlström, Y. M., & Webb, J. K. 2007, *MNRAS*, **382**, 1331
Relationships between the HI 21-cm line strength, MgII equivalent width and metallicity in damped Lyman α absorption systems
12. Curran, S. J., **Tzanavaris, P.**, Murphy, M. T., Webb, J. K., & Pihlström, Y. M. 2007, *MNRAS*, **381**, L6
Detection of broad 21-cm absorption at $z_{\text{abs}} = 0.656$ in the complex sight-line towards 3C336
11. Murphy, M. T., **Tzanavaris, P.**, Webb, J. K., & Lovis, C. 2007, *MNRAS*, **378**, 221
Selection of ThAr lines for wavelength calibration of echelle spectra and implications for variations in the fine-structure constant
10. **Tzanavaris, P.** & Georgantopoulos, I. 2007, *A&A*, **468**, 129
Searching for hidden AGN in nearby star-forming galaxies with Chandra
9. **Tzanavaris, P.**, Murphy, M. T., Webb, J. K., Flambaum, V. V., & Curran, S. J. 2007, *MNRAS*, **374**, 634
Probing variations in fundamental constants with radio and optical quasar absorption-line observations
8. **Tzanavaris, P.**, Georgantopoulos, I., & Georgakakis, A. 2006, *A&A*, **454**, 447
Searching for X-ray luminous “normal” galaxies in 2dFGRS
7. **Tzanavaris, P.**, Webb, J. K., Murphy, M. T., Flambaum, V. V., & Curran, S. J. 2005, *PRL*, **95**, 041301
Limits on Variations in Fundamental Constants from 21-cm and Ultraviolet Quasar Absorption Lines

6. **Tzanavaris, P.** & Carswell, R. F. 2003, *MNRAS*, **340**, 937
Size estimates for intervening C IV absorbers from high-resolution spectroscopy of APM 0827+5255
5. Theuns, T., Viel, M., Kay, S., Schaye, J., Carswell, R. F., & **Tzanavaris, P.** 2002, *ApJ*, **578**, L5
Galactic Winds in the Intergalactic Medium
4. Theuns, T., Zaroubi, S., Kim, T.-S., **Tzanavaris, P.**, & Carswell, R. F. 2002, *MNRAS*, **332**, 367
Temperature fluctuations in the intergalactic medium

REFEREES

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