## Tassos Fragos (Anastasios Fragkos)


CONTACT INFORMATION

Geneva Observatory, University of Geneva
Chemin des Maillettes 51
Versoix, CH-1290, Switzerland

anastasios.fragkos@unige.ch
*Web:* www.tassosfragos.com
*Phone:* +41 (0) 76 740 4441


EDUCATION

**Ph.D. in Physics & Astronomy** ***03/2011***
Northwestern University, USA
(Advisor: Prof. Vassiliki Kalogera)

**M.Sc. in Physics & Astronomy** ***09/2006***
Northwestern University, USA
(Advisor: Prof. Vassiliki Kalogera)

**B.Sc. in Physics** ***06/2004***
Aristotle Universtity, Thessaloniki, Greece
(Advisors: Prof. Loukas Vlahos, Prof. Fernando Moreno-Insertis)

RESEARCH INTERESTS

⋆ Stellar and binary evolution ⋆ Formation and evolution of compact objects ⋆ black holes and neutron stars ⋆ Evolutionary history of Galactic X-ray binaries ⋆ Extragalactic populations of X-ray binaries ⋆ Evolution of triple and multiple stellar systems ⋆ Binary evolution in dense stellar systems ⋆ High performance computing in computational astrophysics

ACADEMIC POSITIONS

- Scientific Collaborator II (SNSF Ambizione Fellow), University of Geneva ***06/2014-Present***
- Visiting Researcher, University of Istanbul ***04/2014-05/2014***
- Visiting Research Associate, Northwestern University ***01/2014-Present***
- CfA Postdoctoral Fellow, Harvard Smithsonian Center for Astrophysics ***09/2010-01/2014***
- ITC Postdoctoral Fellow, Harvard University ***09/2010-01/2014***
- KITP affiliate, *"Formation and Evolution of Globular Clusters"* program, Kavli Institute for Theoretical Physics, Santa Barbara ***01/2009-04/2009***
- Research Assistant, Northwestern University ***09/2006-08/2010***
- Erasmus exchange research student, Instituto de Astrophysica de Canarias - Univeridad de La Laguna, Spain ***09/2002-02/2003***
- Research student, Station for Radioastronomy at Nancay, France ***06/2001-08/2001***

FELLOWSHIPS AND AWARDS

I currently hold a highly competitive and prestigious Ambizione Fellowship from the Swiss National Science Foundation. During my career I have attracted over $1,100,000 of independent funding as principal investigator.

- **Fellowships**
  - SNSF Ambizione Fellowship - **$420,000** ***06/2014-06/2017***
  - CfA Postdoctoral Prize Fellowship - **$261,500**, Harvard-Smithsonian Center for Astrophysics ***09/2010-01/2014***
  - ITC Postdoctoral Prize Fellowship, Harvard University - **$90,000**, ***09/2010-01/2014***
  - Presidential Fellowship, Northwestern University, - **$64,000** ***09/2008-08/2010***
  - Member of the *Northwestern Society of Fellows*, ***09/2008-Present***
  - Gerondelis Foundation Fellowship - **$5,000**, ***09/2005-08/2006***
  - Huang Fellowship, Northwestern University - **$5,000**, ***09/2004-08/2005***
  - University Fellowship, Northwestern University, ***09/2004-08/2005***

- Erasmus Fellowship, European Union, ***09/2002-03/2003***
- Greek State Scholarships Foundation Fellowship, ***09/1999-08/2000***

- **Research Grant Awards**
  - *"Development of Novel Statistical Tools for the Analysis of Astronomical Data"* ***09/2015***
    H2020-MSCA-RISE, 2015, (**Co-I; PI Prof. Zezas - subcontract of €99,000**)
  - *"A Novel Approach to the Common Envelope Evolution"* ***07/2015***
    NASA - *Chandra* Theory Program, Cycle 16 (**Science PI - $75,000**)
  - *"A new computational tool for XRB modeling: application to elliptical galaxies"* ***07/2009***
    NASA - *Chandra* Theory Program, Cycle 11 (**Science PI - $85,000**)
  - *"Constraining the transient LMXB population"* ***07/2009***
    NASA - *Chandra* Observing GO, Cycle 11 (**Co-I**; PI: G. Fabbiano)
  - *"The ringed galaxy NGC1291"* ***07/2009***
    NASA - *Chandra* Observing GO, Cycle 11 (**Co-I**; PI: G. Fabbiano)
  - *"Constraining the transient black-hole low-mass X-ray binary population"* ***07/2010***
    NASA - *Chandra* Observing GO, Cycle 12 (**Co-I**; PI Fabbiano)
  - *"Chandra/Herschel Survey: The Black Hole Accretion/Starburst Connection"* ***07/2011***
    NASA - *Chandra* Archival Program, Cycle 13 (**Co-I**; PI Trichas)
  - *"Direct Chandra Constraints on the Evolution of Field Lmxb Populations"* ***07/2011***
    NASA - *Chandra* Observing GO, Cycle 13 (**Co-I**; PI Lehmer)
  - *"The Origin of Elevated X-ray Emission in Strong H-alpha Emitting Galaxies."* ***07/2012***
    NASA - *Chandra* Observing GO, Cycle 14 (**Co-I**; PI Chary)
  - *"A Subgalactic Multiwavelength Perspective on the Formation of XRB Populations"* ***09/2012***
    NASA - ADAP (**Co-I**; PI Lehmer)

## Supervising and Mentoring

- **Current Students**
  - *Mads Soerensen* (Ph.D. Student, University of Geneva): Mads' thesis is on the effects of binary stars on the rates of different classes of giant and Wolf-Rayet stars, the rate of different types of supernova, and the ionizing flux produced by a stellar population. ***9/2014-Present***
  - *Ying Qin* (Ph.D. Student, University of Geneva): Ying's thesis is on the progenitors of long Gamma-ray bursts and high-mass X-ray binaries. Ying is supported through a national fellowship from the Chinese Scholarship Council. ***9/2014-Present***
- **Former Students**
  - *ThingWai Wong* (SAO Preodoctoral Fellow, Harvard-Smithsonian CfA): TsingWai's project, *which resulted in 2 ApJ publications*, was on modeling the evolutionary history of two high-mass X-ray binaries, IC10 X-1 and Cyg X-1, which host black holes. Tsing-Wai completed his Ph.D. on 12/2013 at Northwestern University. ***08/2013-08/2013***
  - *Michael Tremmel* (Senior Thesis, Northwestern University): Michael's senior thesis, *which resulted in 2 ApJ publications*, was on on extragalactic X-ray sources and the evolution of X-ray binary populations across cosmic time. Using data from semi-analytical galaxy models, he simulated the X-ray binary populations of galaxies out to redshifts of around 10. Using these models, he calculated the integrated X-ray luminosities of these galaxies and derive galaxy X-ray luminosity functions to compare with observations done out to redshift of about 1.4. Michael is currently a Ph.D. student at the University of Washington. ***06/2009-03/2013***
  - Supervised a group of 7 senior undergraduate student, as part of a NASA summer REU (Research Experience for Undergraduates) program at Northwestern University. ***06/2009-09/2009***
    - *Marcel Flores* (Undergraduate student, Northwestern University, Dept. of Applied Mathematics): Deployment of database technologies for storing and managing large data-sets from population synthesis simulations.
    - *Charles Kimball* (Undergraduate student, Northwestern University, Dept. of Physics and Astronomy): Studying the mass distribution of black holes in Galactic black hole X-ray binaries, and its dependence on transient and persistent behavior.

- *Michael Tremmel* (Undergraduate student, Northwestern University, Dept. of Physics and Astronomy): Studying the spin-orbit misalignment in Galactic black-hole X-ray binaries (*which resulted in 1 ApJ publication*)
- *Jason Wang* (Post-graduate research assistant, Northwestern University, Dept. of Physics and Astronomy): Acceleration of the equation of state calculations in stellar evolution modeling using Graphic Processing Units.
- *Andrew Wesson* (Undergraduate student, Carnegie Mellon University): Writing a versatile Python interface of a new population synthesis code that includes live stellar evolution. Porting the code to the MUSE framework.
- *Kyle Kremer* (Undergraduate student, Northwestern University, Dept. of Physics and Astronomy): Studying the orbital period distribution of Galactic X-ray binaries, and its dependence on the modelling of the common envelope phase.
- *Michael Downey* (Undergraduate student, Northwestern University, Dept. of Physics and Astronomy): Studying the evolutionary history of the Galactic neutron star X-ray binary $Cen\,X-4$.

## Relevant Work Experience

- **Teaching Experience**
  - Guest Lecturer for the graduate course *Stellar structure and evolution* ***Spring 2015***
  - Teaching Assistant for *Stellar Astrophysics 325/425* ***03/2007-06/2007***
  - Teaching Assistant for *Physics Laboratory 135-2* ***09/2005-06/2006***
  - Teaching Assistant for *Physics 135-3* ***03/2006-06/2006***
- **Academic Administrative Experience**
  - Organizer of the *Stellar Astrophysics Group Meeting and Journal Club* at the Geneva Observatory. The group is currently composed of 28 senior and junior members. ***09/2014 - Present***
  - Member of the *Northwestern Research and Administrative Computing Committee (RACC)*. The subject of this committee is to identify research and administrative computing needs in the university over the next five to ten years. ***09/2008-08/2010***
  - Member of the "*Vision 2020*" initiative. Explore the faculty needs for technology to support research and creative activity through year 2020 and the changing nature of research and the University infrastructure. ***09/2008-08/2010***
  - Affiliate of the "*Undergraduate Cross Honors Colloquium organization*". A committee that organized a series of seminars for undergraduate students with the goal of introducing them to future interdisciplinary research opportunities. ***09/2008-08/2010***
  - Co-organizer of the "Northwestern Undergraduate Fellowship Forum". The goal of the forum is to inform Northwestern undergraduate student about funding and fellowship opportunities for the continuation of their studies to the graduate level. ***09/2008-08/2010***
  - Member of the *Great Lakes Consortium for Petascale Computing* The consortium facilitates effective use of petascale computing, through the development of new computing software and technologies. Key partner of the Blue Waters project. ***09/2007-08/2008***
- **High Performance Computing**
  - Participated in the benchmarking processes during the architecture design, bidding, and deployment phases of the *Quest* HPC cluster at Northwestern University. ***05/2009-08/2010***
  - Training of Northwestern University undergraduate students in several aspects of high performance computing (J. Andrews, M. Flores, A. Muratov, T. Poole). ***06/2007-08/2008***
  - System administrator of the high performance computing cluster at the Northwestern Theoretical Astrophysics group (500 CPUs, 30TB of storage, 30 high-end GPUs). ***06/2006-08/2008***
  - Leading role in the architecture design, budget planning, bidding, deployment, and testing of the *Fugu* HPC cluster of CIERA. ***06/2006-06/2007***
  - System administrator of the Linux workstations at the Northwestern Theoretical Astrophysics group. ***06/2006-06/2007***
- **Other Academic Services**
  - Referee for the three major journals in Astrophysics: "*The Astrophysical Journal*", "*Monthly Notices of the Royal Astronomical Society*", and "*Astronomy & Astrophysics*".

- Referee for the interdisciplinary journal "*Nature*".
- Member of the American Astronomical Society (AAS)
- Member of the Hellenic Astronomical Society (Hel.A.S.)
- Member of the *MODEST* (MOdeling of DEnse STellar systems) international collaboration. MODEST is a loosely knit initiative of various groups working in stellar dynamics, stellar evolution, and stellar hydrodynamics. The aim of this collaboration is to provide a software framework for large-scale simulations of dense stellar systems, within which existing codes for dynamics, stellar evolution, and hydrodynamics can be easily coupled.

## Invited and Conference Presentations

- **Seminars & Colloquia**

1. Stellar and Extragalactic Astronomy Lunch (SEAL), GSFC-NASA, USA *08/2015*
2. Astronomy seminar, ETH-Zurich, Switzerland *12/2014*
3. CIERA Seminar, CIERA, Northwestern University *8/2014*
4. High Energy Astrophysics Seminar, Max-Plank Institute for Astrophysics, Germany *9/2013*
5. Stellar Astrophysics Seminar, Argelander Institute for Astronomy, Germany *9/2013*
6. Geneva Observatory Seminar, University of Geneva, Switzerland *01/2013*
7. Seminar of the Astrophysics, Astronomy and Mechanics Division, Aristotle University of Thessaloniki, Greece *10/2012*
8. Astrophysics, Astronomy and Mechanics seminar, the University of Athens, Greece *10/2012*
9. Astronomy and astrophysics seminar at the Academy of Athens, Greece *05/2011*
10. Astronomy and astrophysics seminar at the National Observatory of Athens, Greece *05/2011*
11. CGWP Seminar at the Department of Astronomy of Penn State University *04/2011*
12. Astronomy and astrophysics seminar at the University of Crete, Greece *10/2010*
13. CCAPP seminar at the Department of Astronomy of Ohio State University *10/2009*
14. WUNCH seminar at the Department of Astronomy of Princeton University *05/2009*
15. Astronomy Tea Talk at the Department of Astronomy of CalTech *05/2009*
16. Theoretical Astrophysics Center (TAC) seminar at the Department of Astronomy of University of California at Berkeley *05/2009*
17. Cross Honors Colloquium of the Office of Fellowships at Northwestern University *04/2009*
18. Institute of Theory and Computation (ITC) seminar, Harvard-Smithsonian CfA *04/2009*
19. Astronomy and astrophysics seminar at the Academy of Athens, Greece *09/2007*
20. Astronomy and astrophysics seminar at the National Obs. of Athens, Greece *09/2007*

- **Oral Conference Presentations**

21. *"On the Formation of ULXs with NS Accretors: The case of M82 X-2"*, *08/2015*
"XXIX IAU General Assembly", Hawaii, USA
22. *"Evolution of XRBs Across Cosmic Time and Energy Feedback at High Redshift"*, *08/2015*
"XXIX IAU General Assembly", Hawaii, USA
23. *"The Origin of Black Hole Spin in Galactic LMXBs"*, *08/2015*
"XXIX IAU General Assembly", Hawaii, USA
24. *"The formation of NS-ULXs"*, ***Invited Talk*** *07/2015*
"14th Marcel Grossmann Conference", Rome, Italy
25. *"Feedback from X-ray binaries throughout cosmic time"*, ***Invited Talk*** *06/2015*
"The Impact of Massive Binaries Throughout the Universe", Leiden, Netherlands
26. *"Rotation in massive stars: Progenitors, Core Collapse, Remnants"*, ***Inv. Panelist*** *06/2015*
"Fifty One Erg", Raleigh, NC, USA
27. *"Understanding Black-Hole kicks and spins"*, ***Invited Talk*** *06/2015*
"Fifty One Erg", Raleigh, NC, USA

28. *"The Origin of Black Hole Spin in Galactic LMXBs"*, ***Solicited Talk*** *11/2014*
"15 Years of Science with Chandra", Cambridge, USA

29. *"The Origin of Black Hole Spin in Galactic LMXBs"*, ***Invited Talk*** *09/2013*
"Hellenic Astronomical Society", Athens, Greece

30. *"The Origin of Black Hole Spin in Galactic LMXBs"*, ***Invited Talk*** *05/2013*
"Compact Binaries Meeting", Columbia University, New York, USA

31. *"Supernova Kicks in Black Hole X-ray Binaries"*, ***Invited Talk*** *01/2013*
"X-ray Binaries 13: A thinkshop on the present and future of XRB studies", Bormio, Italy

32. *"Models for Low-Mass X-ray Binary Evolution"*, ***Invited Talk*** *09/2012*
"Compact Binaries in Globular Clusters", Leiden, Netherlands

33. *"Evolution of X-ray Binaries Across Cosmic Time"*, *09/2012*
"Half a Century of X-ray Astronomy", Mykonos, Greece

34. *"Evolution of X-ray Binaries Across Cosmic Time"*, *07/2012*
"X-ray Binaries: Celebrating 50 Years Since the Discovery of Sco X-1", Boston, USA

35. *"Stellar Feedback I: Feedback from X-ray Binaries "*, ***Invited Talk*** *06/2012*
"The Physics of Feedback Processes and their Role in Galaxy Evolution", Aspen Center for Physics, USA

36. *"XRBs Across Cosmic Time and Energy Feedback at High Redshift"*, ***Invited Talk*** *09/2011*
"The Future of Astronomy: Fellows at the Frontier", Evanston, USA

37. *"Evolution of X-ray Binaries Across Cosmic Time"*, *11/2011*
"High Energy Views of Galaxies and their Nuclei", Tulum, Mexico

38. *" X-ray Binary Formation and Evolution on cosmological timescales"*, *10/2010*
"High Energy View of Accreting Objects: AGN and X-ray Binaries", Crete, Greece

39. *"Modeling X-ray binary populations in elliptical galaxies."*, *09/2009*
"Chandras First Decade of Discovery", Boston, USA

40. *"Modeling X-ray binary populations in elliptical galaxies."*, *06/2009*
"International Conference on Binaries", Mykonos, Greece

41. *"Looking at the stars ...through a supercomputer"*, *05/2009*
Presidential Fellow Retreat, Fontana, Wisconsin, USA

42. *"Modeling of transient LMXBs in the elliptical galaxies NGC3379 and NGC4278"*, *01/2009*
"Formation and Evolution of Globular Clusters", KITP, Santa Barbara, USA

43. *"Low-Mass X-ray Binary Models for ellipticals NGC3379 and NGC4278"*, *05/2008*
"The X-ray Universe 2008" Symposium, Granada, Spain

44. *"Black Hole Formation: Progenitors and Kicks"*, *04/2008*
HEAD (High Energy Astrophysics Division) Meeting, Los Angleles, USA

45. *"Low-Mass X-ray Binary Models for ellipticals NGC3379 and NGC4278"*, *09/2008*
"X-rays from Nearby Galaxies", European Space Agency Center, Madrid, Spain

46. *"Black Hole Formation and Natal Kicks: The Case of XTE J1118+480"*, *09/2007*
8th Hellenic Astronomical Conference, Thassos, Greece

47. *"Low-Mass X-ray Binary Models for ellipticals NGC3379 and NGC4278"*, *01/2007*
MODEST 7b workshop, Philadelphia, USA

48. *"Black Hole Formation and Natal Kicks: The Case of XTE J1118+480"*, *06/2006*
The Multicoloured Landscape of Compact Objects and their Explosive Origins International Meeting, Cefalu, Sicily, Italy

## Refereed Publications

1. *Statistical Properties of the Energy Release from Emerging and Evolving Active Regions.* Vlahos, L., **Fragos, T.**, Isliker, H., Georgoulis, M., The Astrophysical Journal, Volume 575, Issue 2, pp. L87-L90 (2002).

2. *Statistical Energy Storage in Solar Active Regions.* **Fragos, T.**, Rantsiou, E., Vlahos, L., Astronomy and Astrophysics, v.420, p.719-728 (2004)

3. *Constraining Population Synthesis Models via the Binary Neutron Star Population.* O'Shaughnessy, R., Kim, C.; **Fragos, T.**, Kalogera, V., Belczynski, K., The Astrophysical Journal, Volume 633, Issue 2, pp. 1076-1084 (2005)

4. *On the Formation and Progenitor of PSR J0737-3039: New Constraints on the Supernova Explosion Forming Pulsar B.* Willems B., Kaplan J., **Fragos T.**, and Kalogera V., Physical Review D, vol. 74, Issue 4, id. 043003 (2006)

5. *The Modulated Emission of the Ultraluminous X-Ray Source in NGC 3379.* Fabbiano G., Kim D.-W., Kalogera V., **Fragos T.**, King, A. R., Angelini, L., Davies, R. L., Gallagher, J. S., Pellegrini, S., Trinchieri, G., Zepf, S. E., Zezas, A., The Astrophysical Journal, Volume 650, Issue 2, pp. 879-884 (2006)

6. *A multiphysics and multiscale software environment for modeling astrophysical system.* Portegies Zwart, S., McMillan, S., O'Nuallin, B., Heggie, D., Lombardi, J., Hut, P., Banerjee, S., Belkus, H., **Fragos, T.**, Fregeau, J., Fuji, M., Gaburov, E., Glebbeek, E., Groen, D., Harfst, S., Izzard, R., Juri, M., Justham, S., Teuben, P., van Bever, J., Yaron, O., Zemp, M.,Lecture Notes in Computer Science, vol. 5102, p. 207-216 (2008)

7. *Low-Mass X-ray Binary Models for ellipticals NGC3379 and NGC4278.* **Fragos T.**, Kalogera V., Belczynski, K., Fabbiano G., Kim D.-W., King, A. R., Angelini, L., Davies, R. L., Gallagher, J. S., Pellegrini, S., Trinchieri, G., Zepf, S. E., Zezas, A., The Astrophysical, Volume 683, Issue 1, pp. 346-356 (2008)

8. *Deep Chandra Monitoring Observations of NGC 3379: Catalog of Source Properties.* Brassington, N. J., Fabbiano, G., Kim, D. -W., Zezas, A., Zepf, S., Kundu, A., Angelini, L., Davies, R. L., Gallagher, J., Kalogera, V., **Fragos, T.**, King, A. R., Pellegrini, S., Trinchieri, G., The Astrophysical Journal Supplements, Volume 179, Issue 1, pp. 142-165 (2008)

9. *Deep Chandra Monitoring Observations of NGC 4278: Catalog of Source Properties.* Brassington, N. J., Fabbiano, G., Kim, D. -W., Zezas, A., Zepf, S., Kundu, A., Angelini, L., Davies, R. L., Gallagher, J., Kalogera, V., **Fragos, T.**, King, A. R., Pellegrini, S., Trinchieri, G., The Astrophysical Journal Supplements, Volume 181, Issue 2, pp. 605-626 (2009)

10. *A multiphysics and multiscale software environment for modeling astrophysical system.* Portegies Zwart, S., McMillan, S., Harfst, S., Groen, D., Fujii, M., Nuallain, B., Glebbeek, E., Heggie, D., Lombardi, J., Hut, P., Angelou, V., Banerjee, S., Belkus, H., **Fragos, T.**, Fregeau, J., Gaburov, E., Izzard, R., Juric, M., Justham, S., Sottoriva, A., Teuben, P., van Bever, J., Yaron, O., Zemp, M., New Astronomy, Volume 14, Issue 4, p. 369-378 (2009)

11. *Understanding Compact Object Formation and Natal Kicks: II. The Case of XTE J1118+480.* **Fragos, T.**, Willems, B., Ivanova, N., Kalogera, V., The Astrophysical Journal Volume 697, Issue 2, pp. 1057-1070 (2009)

12. *Transient Low-mass X-ray Binary Populations in Elliptical Galaxies NGC3379 and NGC4278.* **Fragos T.**, Kalogera V., Willems, B., Belczynski, K., Fabbiano G., Kim D.-W., King, A. R., Angelini, L., Davies, R. L., Gallagher, J. S., Pellegrini, S., Trinchieri, G., Zepf, S. E., Zezas, A., The Astrophysical Journal Letters, Volume 702, Issue 2, pp. L143-L147 (2009)

13. *Comparing GC and Field LMXBs in Elliptical Galaxies with Deep Chandra and Hubble Data* Kim, D. -W., Fabbiano, G., Brassington, N. J., **Fragos, T.**, Kalogera, V., Zezas, A., Jordan, A., Sivakoff, G. R., Kundu, A., Zepf, S. E., Angelini, L., Davies, R. L., Gallagher, J. S., Juett, A. M., King, A. R., Pellegrini, S., Sarazin, C. L., Trinchieri, G., The Astrophysical Journal, Volume 703, Issue 1, pp. 829-844 (2009)

14. *Black Hole Spin - Orbit Misalignment in Galactic X-ray Binaries.*
**Fragos, T.**, Tremmel, M., Rantsiou, E., Belczynski, K., The Astrophysical Journal Letters, Volume 719, Issue 1, pp. L79-L83 (2010)

15. *The formation of the intriguingly tight binary M33 X-7 hosting a* $15.65\,M_{\odot}$ *black hole.*
Valsecchi, F., Glebbeek, E., Kalogera, V., **Fragos, T.**, Willems, B., Nature, Volume 468, Issue 7320, pp. 77-79 (2010)

16. *Understanding Compact Object Formation and Natal Kicks. III. The Case of Cygnus X-1*
Wong, T., Valsecchi, F., **Fragos, T.**, Kalogera, V., The Astrophysical Journal, Volume 747, Issue 2, article id. 111 (2012)

17. *Probing the X-Ray Binary Populations of the Ring Galaxy NGC 1291*
Luo, B. Fabbiano, G., **Fragos, T.**, Kim, D.-W., Brassington, N., Pellegrini, S., Tzanavaris, P., Wang, J., Zezas, A., Belczynski, K., The Astrophysical Journal, Volume 749, Issue 2, article id. 130 (2012)

18. *The Spectral and Temporal Properties of Transient Sources in Early-Type Galaxies*
Brassington, N. Fabbiano, G., Zezas, A., Kim, D.-W., **Fragos, T.**, King, A., Kundu, A., Pellegrini, S., Trinchieri, G., Zepf, S., The Astrophysical Journal, Volume 755, Issue 2, article id. 162 (2012)

19. *Deep Chandra Monitoring Observations of NGC 4649: I. Catalog of Source Properties.*
Luo, B., Fabbiano, G., Strader, J., Kim, D.-W., Brodie, J. P., **Fragos, T.**, Gallagher, J. S., King, A., Zezas, A., The Astrophysical Journal Supplement, Volume 204, Issue 2, article id. 14, 15 pp. (2013)

20. *Deep Chandra Monitoring Observations of NGC 4649: II. Wide-Field Hubble Space Telescope Imaging of the Globular Clusters*
Strader, J., Fabbiano, G., Luo, B., Kim, D-W., Brodie, J. P., **Fragos, T.**, Gallagher, J. S., Kalogera, V., King, A., Zezas, A., The Astrophysical Journal, Volume 760, Issue 1, article id. 87, 7 pp. (2012)

21. *A Variable Ultraluminous X-ray Source in a Globular Cluster in NGC 4649.*
Roberts, T., Fabbiano, G., Luo, B., Kim, D-W., Strader, J., Middleton, M.J., Brodie, J. P., **Fragos, T.**, Gallagher, J. S., Kalogera, V., King, A., Zezas, A., The Astrophysical Journal, Volume 760, Issue 2, article id. 135, 7 pp. (2012)

22. *On the origin of the metallicity dependence in dynamically formed extragalactic low-mass X-ray binaries.*
Ivanova, N.; **Fragos, T.**; Kim, D.-W.; Fabbiano, G.; Avendano Nandez, J. L.; Lombardi, J. C.; Sivakoff, G. R.; Voss, R.; Jordan, A., The Astrophysical Journal Letters, Volume 760, Issue 2, article id. L24, 4 pp. (2012)

23. *The X-ray Star Formation Story as Told by Lyman Break Galaxies in the 4 Ms CDF-S*
Basu-Zych, A. R., Lehmer, B. D., Hornschemeier, A. E., Bouwens, R. J., **Fragos, T.**, Oesch, P. A., Belczynski, K., Brandt, W. N., Kalogera, V., Luo, B., Miller, N., Mullaney, J. R., Tzanavaris, P., Xue, Y., Zezas A., The Astrophysical Journal, Volume 762, Issue 1, article id. 45, 15 pp. (2013)

24. *Metallicity Effect on LMXB Formation in Globular Clusters*
Kim, D.-W.; Fabbiano, G.; Ivanova, N.; **Fragos, T.**; Jordan, A.; Sivakoff, G.; Voss, R., The Astrophysical Journal, Volume 764, Issue 1, article id. 98, 8 pp. (2013)

25. *X-ray Binary Evolution Across Cosmic Time*
**Fragos, T.**, Tremmel, M., Lehmer, B., Tzanavaris, Kalogera, V., P., Basu-Zych, A., Belczynski, K., Hornschemeier, A., Jenkins, L., Ptak, V., Zezas, A., The Astrophysical Journal, Volume 764, Issue 1, article id. 41, 13 pp. (2013)

26. *Simulating the Redshift Evolution of Normal Galaxy X-ray Luminosity Functions*
Tremmel, M., **Fragos, T.**, Kalogera, V., Hornschemeier, A., Tzanavaris, P., Basu-Zych, A., Belczynski, K., Jenkins, L., Lehmer, B., Ptak, V., Zezas, A., The Astrophysical Journal, Volume 766, Issue 1, article id. 19, 13 pp. (2013)

27. *Modeling X-ray Binary Evolution in Normal Galaxies: Insights form SINGS*
Tzanavaris, P., **Fragos, T.**, Tremmel, M., Jenkins, L. P., Zezas, A., Belczynski, K., Hornschemeier, A., Kalogera, V., Ptak, A., Lehmer, B. D., Basu-Zych, A. R., The Astrophysical Journal, Volume 774, Issue 2, article id. 136, 17 pp. (2013)

28. *Evidence for Elevated X-ray Emission in Local Lyman Break Galaxy Analogs*
Basu-Zych, A. R., Lehmer, B. D., Hornschemeier, A. E., Goncalves, T. S., **Fragos, T.**, Heckman, T., Overzier, R. A., Ptak, A. F., Schiminovich, D., The Astrophysical Journal, Volume 774, Issue 2, article id. 152, 12 pp. (2013)

29. *The Two Dimensional Projected Spatial Distribution of Globular Clusters: Method and Application to NGC4261*
D'Abrusco, R., Fabbiano, G., Strader, J., Zezas, A., Mineo, S., **Fragos, T.**, Bonfini, P., Luo, B., Kim, D.-W., King, A., The Astrophysical Journal, Volume 773, Issue 2, article id. 87, 12 pp. (2013)

30. *Energy Feedback from -Xray Binaries in the Early Universe*
**Fragos, T.**, Lehmer, B., Naoz, S., Zezas, A., The Astrophysical Journal Letters, Volume 776, Issue 2, article id. L31, 6 pp. (2013)

31. *The spatial distribution of X-ray Binaries and Globular Clusters in NGC 4649 and their relation with the local stellar mass density*
Mineo, S., Fabbiano, G., D'Abrusco, R., **Fragos, T.**, Kim, D.-W., Strader, J., Brodie, J. P., Gallagher, J. S., Zezas, A., Luo, B., The Astrophysical Journal, Volume 780, Issue 2, article id. 132, 13 pp. (2014)

32. *The Two-Dimensional Spatial Distribution of the Globular Clusters and Low-Mass X-ray Binaries of NGC4649*
DAbrusco, R., Fabbiano, G., Mineo, S., Strader, J., **Fragos, T.**, Zezas, A., Dong-Woo, K., Luo, B., The Astrophysical Journal, Volume 783, Issue 1, article id. 18, 14 pp. (2014)

33. *The X-ray Luminosity Functions of Field Low Mass X-ray Binaries in Early-Type Galaxies: Evidence for a Stellar Age Dependence*
Lehmer, B. D.,Berkeley, M.,Zezas, A., Alexander, D. M., Basu-Zych, A., Bauer, F. E., Brandt, W. N., **Fragos, T.**, Hornschemeier, A. E., Kalogera, V., Ptak, A., Sivakoff, G. R., Tzanavaris, P., Yukita, M., The Astrophysical Journal, Volume 789, Issue 1, article id. 52, 15 pp. (2014)

34. *Understanding Compact Object Formation and Natal Kicks. IV. The case of IC 10 X-1*
Wong, T.-W, Valsecchi, F., Ansari, A., **Fragos, T.**, Glebbeek, E., Kalogera, V., McClintock, J., The Astrophysical Journal, Volume 790, Issue 2, article id. 119, 14 pp. (2014)

35. *The Origin of Black Hole Spin in Galactic Low-Mass X-ray Binaries*
**Fragos, T.**, McClintock, J., The Astrophysical Journal, Volume 800, Issue 1, article id. 17, 15 pp. (2015)

36. *On the Formation of Ultraluminous X-ray Sources with Neutron Star Accretors: the Case of M82 X-2*
**Fragos, T.**, Linden, T., Kalogera, V., Sklias, P., The Astrophysical Journal Letters, Volume 802, Issue 1, article id. L5, 6 pp. (2015)

37. *On the Hierarchical Triple Origin of Black-hole Low-mass X-ray Binaries*
Naoz, S., **Fragos, T.**, Geller, A., Stephen A., Rasio, F., The Astrophysical Journal Letters (Submited), (2015)

## Conference Proceedings Publications

1. *Black Hole Formation in X-Ray Binaries: The Case of XTE J1118+480.*
**Fragos, T.**, Willems, B., Ivanova, N., Kalogera, V., AIP Conference Proceedings, Volume 924, pp. 673-676 (2007)

2. *A multphysics and multiscale software environment for modeling astrophysical systems.*
Portegies Zwart, S., McMillan, S., Harfst, S., Groen, D., Fujii, M., Nuallain, B., Glebbeek, E., Heggie, D., Lombardi, J., Hut, P., Angelou, V., Banerjee, S., Belkus, H., **Fragos, T.**, Fregeau, J., Gaburov, E., Izzard, R., Juric, M., Justham, S., Sottoriva, A., Teuben, P., van Bever, J., Yaron,

O., Zemp, M., 5th International Workshop on "Simulation of Multiphysics Multiscale Systems" (2007)

3. *Low-Mass X-ray Binary Models for ellipticals NGC3379 and NGC4278.*
**Fragos T.**, Kalogera V., Belczynski, K., Fabbiano G., Kim D.-W., King, A. R., Angelini, L., Davies, R. L., Gallagher, J. S., Pellegrini, S., Trinchieri, G., Zepf, S. E., Zezas, A., "X-rays from Nearby Galaxies", ESA international conference, MPE Report 295, ISSN 0178-0719, p.108-111 (2008)

4. *Models for Low-Mass X-Ray Binaries in Elliptical galaxies NGC3379 and NGC4278.*
Kalogera V. & **Fragos T.**, AIP Conference Proceedings, Volume 1010, pp. 373-377 (2008)

5. *The Eclipsing Black Hole X-ray Binary M33 X-7: Understanding the Current Properties.*
Valsecchi, F., Willems, B., **Fragos, T.**, Kalogera, V., Hot and Cool: Bridging Gaps in Massive Star Evolution, ASP Conference Series (2009)

6. *Modeling X-ray Binary Populations in Elliptical Galaxies.*
**Fragos T.** & Kalogera V., AIP Conference Proceedings, Volume 1314, pp. 326-331 (2010)

7. *The Intriguing Evolutionary History of the Massive Black Hole X-ray Binary M33 X-7.*
Valsecchi, F., Glebbeek, E., Kalogera, V., **Fragos, T.**, Willems, B., AIP Conference Proceedings, Volume 1314, pp. 285-290 (2010)

8. *An Evolutionary Model for the Massive Black Hole X-Ray Binary M33 X-7.*
Valsecchi, F., Glebbeek, E., Farr, W. M., **Fragos**, T., Willems, B., Orosz, J. A., Liu, J., Kalogera, V., ASP Conference Proceedings, Vol. 447, p.271 (2011)