

PROMOTION RECOMMENDATION  
The University of Michigan  
College of Literature, Science, and the Arts

Elena Gallo, assistant professor of astronomy, College of Literature, Science, and the Arts, is recommended for promotion to associate professor of astronomy, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D.	2005	University of Amsterdam, Netherlands
M.S.	2001	Università degli Studi di Milano, Italy
B.S.	2001	Università degli Studi di Milano, Italy

Professional Record:

2010 – present	Assistant Professor, Department of Astronomy, University of Michigan
2008 – 2010	Hubble Post-doctoral Fellow, Massachusetts Institute of Technology
2005 – 2008	Chandra Post-doctoral Fellow, University of California, Santa Barbara

Summary of Evaluation:

Teaching – Professor Gallo has taught at all levels in the Department of Astronomy and is a serious and effective teacher. In all of her classes, Professor Gallo emphasizes the underlying physics of cosmic phenomena and connects it with contemporary research. As a scientist, she puts the scientific method front and center in the classroom with a critical eye, but aims for a level that is accessible to her students. Student evaluations of her courses are in line with other faculty at her level and indicate that students appreciate her personal approach in addition to learning a lot from it. Professor Gallo has been a leader in the training of graduate students prior to admission to candidacy and beyond. She has also been an effective and enthusiastic mentor for her post-doctoral scholars and graduate students, who have published multiple papers in field-leading journals.

Research – Professor Gallo is a world-class astrophysicist who studies the physics of accreting black holes. She is a successful user of highly competitive national and international telescope facilities. Using these observatories, Professor Gallo has opened up a new sub-field in the relations between black hole accretion and outflows, an area where she is widely recognized as leading the field. Professor Gallo has invested her talents in using a range of observations to explore the role environment plays in the activity of massive black holes in the centers of galaxies. With this data, she is setting important constraints on the fraction of galaxies in the local universe that harbor a super-massive black hole, an important question with implications for galaxy formation. Professor Gallo has admirably sought to expand into the area of exoplanet research using an innovative method in order to search for magnetic interactions between the host star and the nearby Jovian mass planet. She has a competitive track record of funding at the national level and has built a strong group of post-doctoral fellows as well as undergraduate and graduate students. Professor Gallo is expanding her scientific breadth and her leadership in the field, suggesting a bright future of scientific discovery.

#### Recent and Significant Publications:

- “A ~50,000 solar mass Black Hole in the nucleus of RGG 118,” with V. F. Baldassare, et al., *The Astrophysical Journal*, 809, 2015, L14.
- “A comprehensive statistical assessment of star-planet interaction,” with B. P. Miller, et al., *The Astrophysical Journal*, 700, 2015, p. 163.
- “X-ray constraints on the local supermassive Black Hole occupation fraction,” with B. P. Miller, et al., *The Astrophysical Journal*, 2015, p. 799.
- “Assessing luminosity correlations via cluster analysis: evidence for dual tracks in the radio/X-ray domain of black hole X-ray binaries,” with B. Miller and R. Fender, *Monthly Notices of the Royal Astrological Society*, 423, 2012, p. 509.

Service – Professor Gallo has been an essential member of her department, serving as a member of the Preliminary Examination Committee, including chair of the committee for two years, a key member of the chair Advisory Committee, member of the Astronomy Center Committee, and the department’s Faculty Ally for Diversity. This sample shows her central role in the department and sincere dedication to the collective enterprise. Professor Gallo has also performed significant national and international service, which highlights her stature in the field.

#### External Reviewers:

##### Reviewer (A)

“One way in which Prof. Gallo has excelled in her time at Michigan has been her ability to win observing time, and associated funding, from NASA’s flagship observatories: Hubble, Chandra and Spitzer. These awards are highly competitive and her continued success in this arena is an outstanding achievement.”

##### Reviewer (B)

“Taken together, Gallo’s work on the radio/X-ray connection in accreting BH binaries is impressive, sustained, and has had (and is having) very significant impact in high-energy astrophysics.”

##### Reviewer (C)

“If I were asked to compile the most significant papers in my field...several of Elena’s pieces of work would be in this. ... She is extremely capable, serious and honest, and takes her role as a scientist and as an educator very seriously.”

##### Reviewer (D)

“Dr. Gallo is amongst the leading researchers in a field that has important ramifications for modern astrophysics: her work on constraining the accretion rate and occupation fraction of the black hole population in nearby galaxies is second [to] none.”

##### Reviewer (E)

“These important papers illustrate Elena’s strength, which is the ability to carefully examine and synthesize a body of observational findings, and to draw important and carefully supported conclusions. I note that the high citation rate of these papers indicates their importance...”

Reviewer (F)

“It is clear from this work as well as Dr. Gallo’s current and future plan in this area that she will continue to be a leader in this area...discovering critical pieces when putting together the full picture of the evolution of inactive galaxies and the influence of their accreting central black holes.”

Reviewer (G)

“...the list of speaking invitations received during her tenure at Michigan indicates the high regard to which she is held among her peers. The research program Elena has developed at Michigan focuses on important problems with future promise based on a track record of high accomplishment. Dr. Gallo would certainly be granted tenure at [my institution]...”

Reviewer (H)

“Elena has plenty of positive results and has discovered important effects and correlations, but something that stands out to me is that, in part because she does her analysis carefully, she is not afraid to present work that demonstrates that attractive ideas don’t work.”

Reviewer (I)

“Elena is a highly gifted observer, with a strong drive, and the patience and leadership to make important but difficult research fields work. She is a leader in her current field, but she also has the vision to start research in new areas.”

Summary of Recommendation:

Professor Gallo is a world-leading expert in the field of black hole astrophysics. She serves as a leader within the Department of Astronomy and is strongly committed to the educational mission of the University of Michigan. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Assistant Professor Elena Gallo be promoted to the rank of associate professor of astronomy, with tenure, College of Literature, Science, and the Arts.



---

Andrew D. Martin, Dean  
Professor of Political Science and Statistics  
College of Literature, Science, and the Arts

May 2016