Name: Amy Lien

Code: 661

Home institution: University of Maryland, Baltimore County

Name of task: Neil Gehrels Swift Observatory (Swift)

What do you do for CRESST:
Performing data analysis and supporting telescope operation of the Burst Alert Telescope (BAT) onboard Swift, a multi-wavelength space telescope dedicated to studying gamma-ray bursts and the transient sky.

What is your background:
I grew up in Taiwan and received my undergraduate degree in physics from the National Central University in Taiwan. I came to the United States to attend graduate school in astronomy at the University of Illinois at Urbana-Champaign. After graduation, I received the NASA Postdoctoral Fellowship at the NASA Goddard Space Flight Center, and have been working here since 2011.

Favorite part of being a CRESST Scientist:
I really enjoy both the research and supportive telescope work that I am involved in as a CRESST scientist. Through working with Swift/BAT, I have a lot of chances to collaborate with astronomers from different fields, and learn about a wide range of energetic transients in the universe, such as gamma-ray bursts, neutron-star mergers, fast-radio bursts, and AGN flares. I also enjoy having the opportunity to work directly with a space telescope, learn how things are operating, and participate in the development of future space missions. Moreover, as a CRESST scientist, I had some chances to teach at universities and work with students, which are a lot of fun.

Highlight of research as a CRESST Scientist:
My research focuses on exploring how the universe begins and evolves through the most energetic astrophysical explosions: gamma-ray bursts (GRBs), supernovae, and the merging of neutron stars and black holes. We perform data analysis of BAT-detected GRBs and used them to probe star-formation history. We also analyze BAT data to search for potential counterparts of gravitational wave events.

Recent Peer Reviewed Publications:
1. *The Third Swift Burst Alert Telescope Gamma-Ray Burst Catalog*
   Amy Lien, Takanori Sakamoto, Scott D. Barthelmy et al.,
   The Astrophysical Journal, Vol. 829, Issue 1, article id 7, 47 pp. (2016)
   arXiv:1606.01956
2. *Modeling the Swift BAT Trigger Algorithm with Machine Learning*
   Philip B. Graff, **Amy Lien**, John G. Baker et al.,

The Astrophysical Journal, Vol. 818, Issue 1, article id. 55, 10 pp. (2016)
arXiv:1509.01228

3. *Probing the Cosmic Gamma-ray Bursts Rate*
   with Trigger Simulations for the Swift Burst Alert Telescope
   Amy Lien, Takanori Sakamoto, Neil Gehrels, et al.
   The Astrophysical Journal, vol. 783, Issue 1, article id. 24, 22 pp. (2014)
   arXiv:1311.4567

Recent presentations:

1. Ioffe Workshop on GRBs and other transient sources, St. Petersburg, Russia (2019)
    Title: Observing the transient sky with the Neil Gehrels Swift Observatory
2. Seminar at the National Taiwan Normal University, Taipei, Taiwan (2019)
      Title: Gamma-Ray Bursts, the Swift Burst Alert Telescope,
         and the Era of Gravitational Waves
3. AAS Press Panel on the AT2018cow, Seattle, WA (2019)
      Title: AT2018cow: A White Dwarf Torn Apart by a Black Hole?

To Contact Amy to learn more about her work or collaboration, she can be reached at:
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