

# AAS Nova and Astrobites as Bridges Between Astronomy Communities

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Collaboration

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**Abstract.** Education and outreach in astronomy often focuses on communicating broad astronomical concepts. But how can educators and outreach practitioners also share current astronomical research results with students and the public, conveying both the process of science and the excitement of new discoveries? AAS Nova and Astrobites are two resources freely available to the astronomy community and the general public, intended to help readers learn about the most recent research published across the field of astronomy. Both supported by the American Astronomical Society, these two daily astrophysical literature blogs provide accessible summaries of recent publications in AAS journals and on the arXiv. As both AAS Nova and Astrobites directly distill original studies, these resources constitute a critical bridge between astronomy researchers and educators, outreach practitioners, and the broader astronomy community. The material on these two websites — which includes a total archive of more than 2,500 research study summaries — is written accessibly while still providing access to the original sources and outcomes. As a result, AAS Nova and Astrobites can be used by educators and outreach practitioners to easily introduce the latest in astronomical research studies into classrooms and outreach events.

**Keywords.** education, outreach

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## 1. Introduction

The topic of science communication encompasses multiple channels; scientific researchers must be able to communicate not only with each other, but also, ultimately, with the public. Communication between scientists and the public is important both from a financial perspective — as much of scientific research is publicly funded — and from the perspective of encouraging education and engagement of the public with science.

Traditionally, communication between scientists and the public occurs through intermediary channels, like the media, outreach practitioners, and educators. Under this model, scientific researchers publish academic papers, and intermediary channels must then understand these outcomes and communicate them to the public.

There are a number of places where this process can break down, however. The first is in getting the information from the researchers — who are generally not trained in science communication (see e.g. [The Royal Society 2006](#)) — to the intermediaries. Use of field-specific jargon, complex methodology descriptions, a lack of provided context, and additional challenges can often obscure the results of a study to the point where they can't be easily understood by someone outside of the field. A bridge is needed to make this information more accessible.

Another point of communication breakdown can occur between the intermediaries and the public. Science can be misrepresented in the process of being shared with the public,

The screenshot shows the AAS Nova website interface. At the top left is the AAS NOVA logo with the tagline "Research highlights from the journals of the American Astronomical Society". To the right is a search bar. Below the logo is a navigation bar with "HOME", "HIGHLIGHTS", and "JOURNALS DIGEST" links, along with social media icons for Twitter, Facebook, and RSS. The main content is divided into two columns: "HIGHLIGHTS" on the left and "JOURNALS DIGEST" on the right. The "HIGHLIGHTS" section features several articles with images and titles, such as "Shaping Globular Clusters with Black Holes" (21 March 2018, FEATURES), "An Occam's Razor for Very-Hot Hot Jupiters" (20 March 2018, ASTROBITES), "AAS Publishing News: An Interview with Christopher Conzelice" (16 March 2018, AAS NEWS), "Featured Image: Bright Dots in a Sunspot" (19 March 2018, IMAGES), and "Modeling the Variable Heliopause Location" (14 March 2018, FEATURES). The "JOURNALS DIGEST" section lists articles like "Suppressed Far-UV Stellar Activity and Low Planetary Mass Loss in the WASP-18 System" (22 March 2018) and "Kronos and Krios: Evidence for Accretion of a Massive, Rocky Planetary System in a Comoving Pair of Solar-type Stars" (21 March 2018).

Figure 1. The AAS Nova homepage.

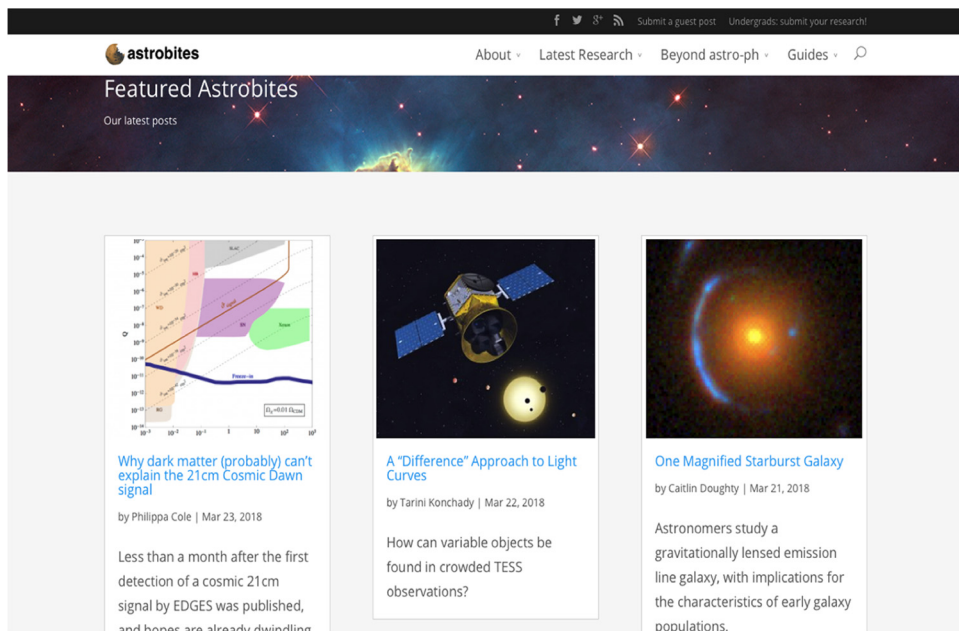
whether by a sensationalized headline or by an oversimplified reporting of a result (see e.g. [Caulfield & Bubela 2004](#)). As we caution the public to be more skeptical of the news they consume, it would be beneficial if we could point them to tools that allow a reader to dig deeper when they see a headline they're skeptical of, or even just to find out more about a scientific study that interests them. This requires a further bridge between the astronomy researchers and the public.

Fortunately, these bridges exist. In the following proceeding, we introduce two of them: AAS Nova and Astrobites.

## 2. Two Resources Available

### 2.1. AAS Nova

AAS Nova (<https://aasnova.org>; Figure 1) is a website developed by the American Astronomical Society (AAS) in 2015. The main goal of the site is to present curated summaries of recent astronomy research that has been published in the journals of the AAS, with the goal of making this work more accessible to a broad variety of groups. Articles featured on the website are selected by AAS journal editors as research of especially large impact or likely to be of interest to a broad audience. While highlighted articles sometimes include major research results that receive independent press attention, they are more often studies with important but less-flashy results, which might not have otherwise been noticed without the attention brought to them via AAS Nova. AAS Nova highlights are published three times per week and are typically around 400–500 words long. Highlights always link back to the original study, they include and explain figures from the original paper, and they add context and background, emphasizing the main results of the study and why they are important.



**Figure 2.** The Astrobites homepage.

## 2.2. *Astrobites*

Astrobites (<https://astrobites.org>; Figure 2) is a website that provides summaries of recent astronomy research published on the arXiv astro-ph preprint server. Astrobites was founded in 2011 and is run by a rotating group of graduate students with the specific goal of making astronomy research easier to learn about for undergraduates first starting out in the field. Astrobites is supported by the AAS since 2016. Astrobites articles are published five times per week and often go into greater depth than an AAS Nova highlight; Astrobites posts typically are 1,000–1,500 words in length.

## 3. Bridging Between Astronomy Communities

Astrobites and AAS Nova can be used in a variety of ways to bridge between various astronomy communities. Here we discuss just a few examples.

### 3.1. *Media*

The media can use the latest AAS Nova and Astrobites posts to discover new astronomical research and obtain information at an accessible level. To facilitate this process, AAS Nova publishes a biweekly tip sheet of recent AAS Nova posts via the American Astronomical Society press-release distribution service.

### 3.2. *Education and Outreach*

AAS Nova and Astrobites have been used in outreach activities and undergraduate and graduate classes in a variety of ways. In particular, Astrobites has published multiple studies exploring different approaches to integrating Astrobites articles into undergraduate and graduate astronomy classes (Sanders *et al.* 2012; Sanders *et al.* 2017). The studies include detailed lesson plans for guided reading assignments (Figure 3), literature research projects, and writing projects in which students write their own Astrobites-style

**Sample: Astrobites Guided Questions for 'Settling the Proxima Centauri Question'**

Read the Astrobite here: <https://astrobites.org/2016/11/16/settling-the-proxima-centauri-question/>

Provide 1–3 sentence responses to each of the following questions.

**\* Required**

**Name / Student ID \***  
Used to assign grades

Your answer \_\_\_\_\_

**Question 1: Proxima Centauri is currently the closest known star to our solar system. According to the information in the paper, was this true 300,000 years ago?**  
This is a sample question for an entry level astronomy course.

Your answer \_\_\_\_\_

**Figure 3.** Sample questions from a guided reading assignment in the Astrobites lesson plans.

posts. All lesson plans are based on Astrobites resources and are targeted at three levels: lower-level undergraduates, upper-level undergraduates, and graduate students.

### 3.3. Preparing Future Science Communicators

Astrobites and AAS Nova provide an additional bridge of preparing current young scientists to become future science communicators. Through the American Astronomical Society, AAS Nova offers a rotating media fellowship for astronomy graduate students, intended to provide training and experience in science communication. At present, Astrobites has around 100 current and former authors who are astronomy graduate students from around the world, and their tenure writing for Astrobites provides them with experience and peer feedback — elements that have been shown to improve science communication skills (see e.g. Liang & Tsai 2010). In these ways, Astrobites and AAS Nova are helping to further bridge the gap between astronomy researchers and the public in the future, helping to increase the readability of future scientific literature.

## 4. Conclusion

AAS Nova and Astrobites are two resources — each with a slightly different model — that provide bridges between astronomy researchers and educators, outreach practitioners, and the broader astronomy community. Both sites hope to continue to grow and collaborate, and they welcome feedback from the community. Please reach out to [aasnova@as.org](mailto:aasnova@as.org) or [astrobites@gmail.com](mailto:astrobites@gmail.com) to contact the teams.

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