

Progress in SNEWS Outreach



Photo: Warner Bros. Animation

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On behalf of TG8_Outreach
SNEWS 2022 Collaboration Meeting
Aug 4, 2022

SNEWS Outreach Taskgroup

Session Summary

1. Overview of Outreach Taskgroup Progress. (B. Pointon)
 - Webpage update
 - AAVSO Collaboration Update (help from George Silvis, and others)
 - Mobile App Update
2. Mobile App Demo (Peter Kramer)

Note: The work of the Outreach TG overlaps with that of:

- follow-up Taskgroup
- firedrill Taskgroup

Second Note: I was on leave for several months and am still catching up:

- please forgive any incompleteness
- thanks Dan M.

SNEWS Outreach Taskgroup

Task List

1. Website redesign**
2. Amateur astronomer community engagement**
3. Fire Drill co-ordination (refer to Dan. M's previous talks)*
4. SNEWS Mobile App**
5. Social Media
6. Supernova masterclass ???
7. Planetarium shows ???
8. New logo and swag.
9. Pre-fab “Press Kits”, news releases, SNEWS reps.
10. Repository of resources for giving public lectures.

1. Website Redesign

Key principles (from last year)

- modern design and graphics
- usability – “Don’t make me think”, “each click is a mindless, unambiguous choice”, “Get rid of half the words on each page...” Krug’s
- website content
 - general information
 - quick references
 - training materials
 - **immediate** SNEWS alert data contact info
 - press kit
 - **overview of “ways to be involved”**
 - **access to SNEWS-related materials (papers, videos, lectures)**
- easy to add content – Wordpress
- mobile friendly

1. Website Redesign

Progress on New SNEWS Website:

Purdue and BCIT students having been working on new website development:

- last year Jessica Townsend, Katie O'Brien (Purdue) and others suggested new layout and design features.
- Jan – April 2022, BCIT computing student project
 - (Sean Clayton, Mo Baydoun, Joshua Krauchi and Dujin Kim)
 - worked on implementing the new layout and design
 - developed other new features and tools.
- Dan M. set up infrastructure to host Website at Purdue
 - <https://snews2.org/>
- Dedicated SNEWS Slack channel **#snews2-webpage**

1. Website Redesign

New features developed by BCIT students, but not yet implemented:

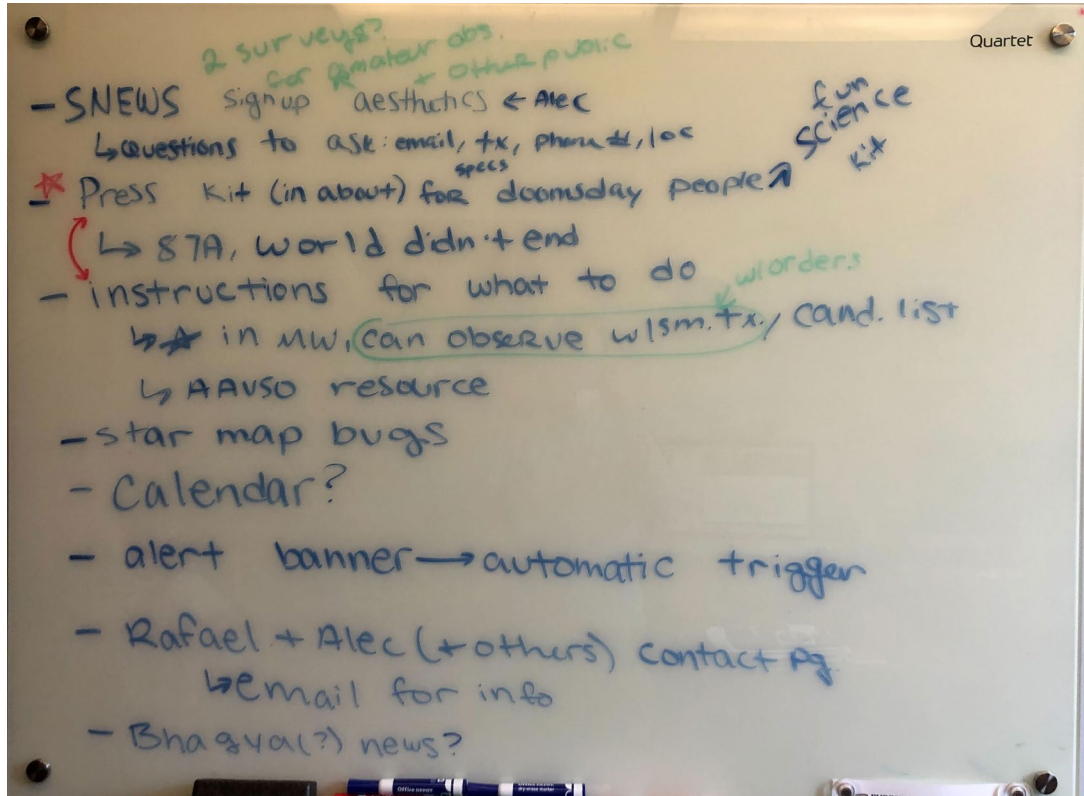
- SNEWS alert banner
- Calendar
- SNEWS World Map with clickable observer location info:
 - SNEWS detectors, observatories, observers
 - day/night
 - weather (using info from “Clearoutside.com”)
- SNEWS Star Map with clickable star info:
 - RSG candidate stars

Website Test Link (hidden)



1. Website Redesign

New Brainstorming ideas



2. Amateur astronomer and community engagement

From the SNEWS 2.0 whitepaper: <https://arxiv.org/abs/2011.00035>

7. Amateur Astronomer Engagement

The next galactic core-collapse supernova will be a once-in-a-lifetime event. Amateur astronomers will play a vital role in identifying and observing the optical component of the explosion in real time when it appears in the sky. Because SNEWS is designed to provide an early warning of the appearance of such an explosion, **the interface between SNEWS and the astronomical community and particularly amateur astronomers, is critically important**. We aim to reinforce these connections and provide the community with information and resources to ensure they are ready to receive SNEWS alerts and participate in the global effort to spot the optical signal. This outreach effort will be guided by three broad thrusts, as described below: **awareness**, **preparedness**, and **follow-up**.

Thrust 3: Follow-up

When the day finally arrives, the **initial SNEWS alert may contain little or no pointing information. It will therefore be up to the professional and amateur astronomy communities to identify and report the precise right ascension and declination of the supernova as it becomes visible**. Time will be of the essence; it is imperative that clear and simple reporting mechanisms exist and that observers are aware of them.

SNEWS will develop and distribute training materials so that alert subscribers can familiarize themselves

2. Amateur astronomer and community engagement

AAVSO-SNEWS Collaboration

Initial meeting with Stella Kafka, AAVSO CEO– Nov 20, 2020

Dedicated SNEWS Slack channel **#aavso-collaboration**

Some of the dedicated AAVSO Researchers:

- **George Silvis**
- **Heinz-Bernd Eggenstein**
- **Daniel Zaharevitz**
- **Sebastian Otero**
- **others**

(The following is based on notes from George Silvis)

AAVSO collaboration with SNEWS has two major components:

1. **Observing campaign to measured long term light curves of SN candidate stars**
2. **Preparing Amateurs to be ready for the big event.**

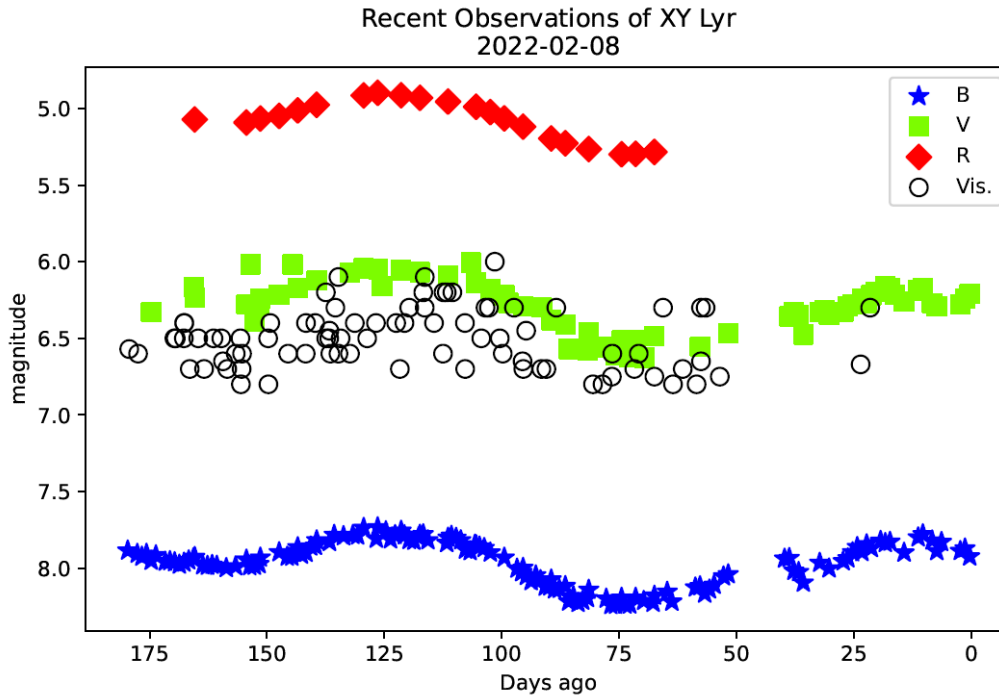
2. AAVSO-SNEWS – SN Candidate Observing Campaign

1. Observing Campaign for long term light-curves of SN candidate stars

- The AAVSO maintains photometric data of stars in the **AID**, AAVSO International Database.
 - Many SN candidates are the usual suspects and already have data in the AID.
- Encouraging continued observations of these targets
 - For observations to be included in AID stars must be identified in **VSX**, AAVSO's Variable Star Database.
 - Scopes in the AAVSONet have been tasked to observe the candidate stars.
 - The AAVSO has a Target Tool where observers can look to see what to observe tonight. The SNEWS Candidates will be added to this tool.
- The list of candidate stars in VSX is available via an API.
<https://www.aavso.org/vsx/index.php?view=api.list&campaign=SNEWS+campaign&ra=14.09&dec=62.2&radius=3.0&format=json>
 - provide an fov (ra/dec/radius) to filter the list (set radius to 180 to get them all!)
 - Data available in json or xml format
- As the SN Candidate list grows these stars are added to VSX
 - comparison stars are identified in the FOV to support measurements.
- **AAVSO SNEWS Campaign page** (<https://www.aavso.org/snews-campaign>)
 - includes a pointer to a google sheet listing the candidate stars

2. AAVSO Collaboration

Early Observing Campaign results from Daniel Zaharevitz



2. AAVSO Collaboration

2. Preparing Amateurs to be ready for the big event.

The AAVSO has an Observing Section called the **High Energy Network** dedicated to chasing transient phenomena.

- <https://www.aavso.org/aavso-international-high-energy-network>
- working to make amateurs aware of the tools like GCN and Astro-COLIBRI and VOEvents.
- The AAVSO does have a SNEWS Campaign page
 - **BUT have not yet pushed it with** a big splash announcement.
 - We're waiting in part for the SNEWS infrastructure to be in place so we can direct our members to it
 - Specifically, when there is a way to sign up for the SNEWS alerts; then we will be able to pull the trigger. (edited)

2. AAVSO Collaboration

More work to do:

- alert followup plan
- more detailed observers guides.
- update candidate list
 - include (WR Stars?)
- set up regular monitoring and assessment of light curves
- other?

2. Others community engagement

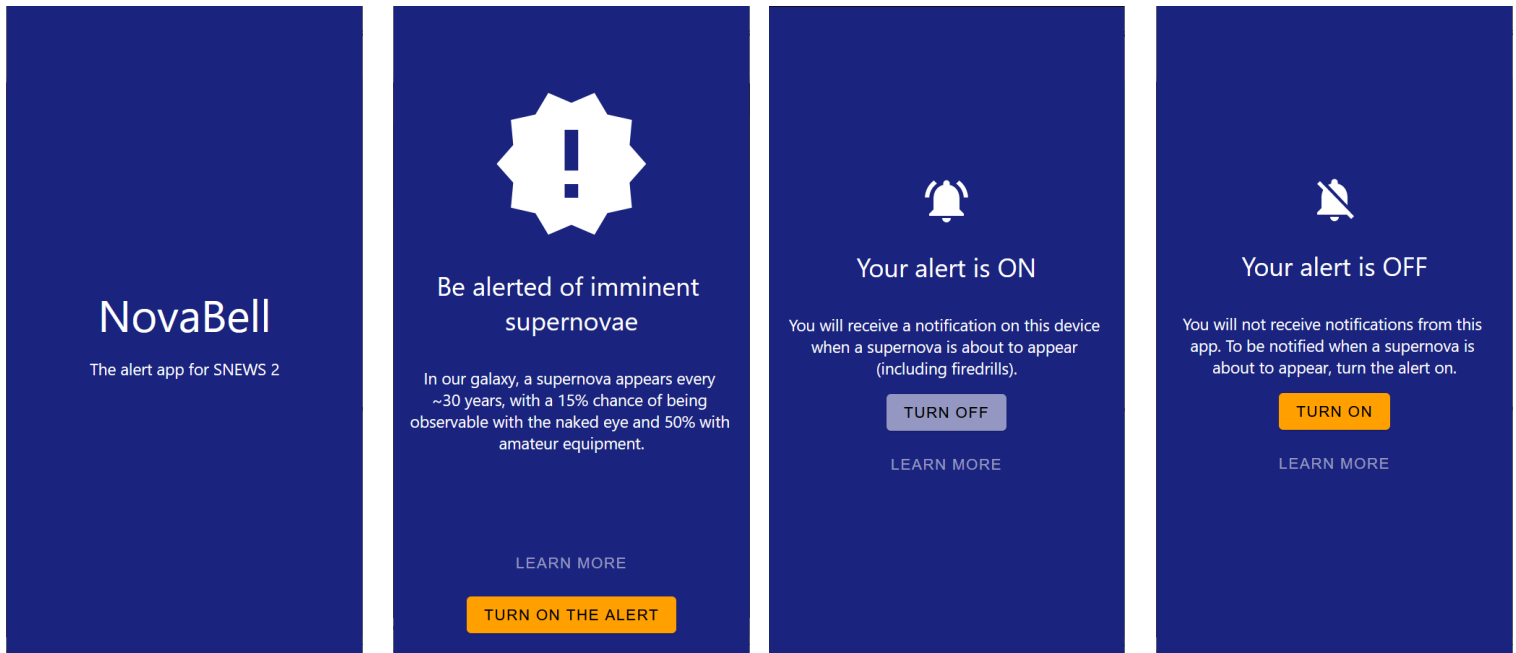
- Other interactions with AAVSO:
 - Dan M. gave talk for AAVSO webinar series, June 12, 2021
 - Barry P. gave Plenary talk for AAVSO 110th Annual Meeting, Nov 7, 2021
 - (“Neutrinos: The Other Way Stars Shine”)
- Working towards a **firedrill**
- Would like to reach out to other amateur and community astronomy groups:
 - RASC - notice again in **RASC Observers Handbook 2022**

4. Mobile SNEWS Apps

- Dedicated SNEWS Slack channel **#app-design** and **#app-private**
- July 5, 2022 interested parties met to discuss creating a SNEWS Alert App
 - slides/notes in presentation after “Spare Slides ...”
 - take alert notice from GCN and make alert
 - issues included how to make alert noticeable
 - choose sounds
- Other related App examples:
 - Peter Kramer’s Gravitational Wave Events app
 - GAIA alerts – not longer updating
 - Astro-COLIBRI – many alerts, I am not user not fully functional
- Peter Kramer agreed to work on start mockups and development of IOS SNEWS App
 - Peter will demo
- Nicholas Form may work on development of Android SNEWS App
 - interested, but was not able meet, very busy until Sept
 - sent new mockups yesterday (!)

4. Mobile SNEWS Apps

Nicholas Form's Android SNEWS Alert App mockups.



SNEWS Outreach Taskgroup

Summary

4. Other items to work on
 - Social Media
 - SNEWS Mobile App
 - Supernova component for IceCube masterclass
 - Planetarium shows
 - New logo and swag
 - Pre-fab “Press Kits”, news releases, SNEWS reps
 - Repository of resources for giving public lectures

SNEWS Outreach Taskgroup Progress Summary

1. New website now launched
 - needs extensive work to fill in content
 - features developed by BCIT students should be added.
2. AAVSO Collaboration has made great progress:
 - new tools implemented
 - observing campaign started
 - needs progress from SNEWS webpage, etc., before AAVSO promotional launch and observer recruitment.
3. Firedrills
4. Work on SNEWS Alert App has started.

Spare Slides/Extras

SNEWS App Meeting

1. Design considerations:

- loud, bright **not ignorable** (can it bypass sound off)
 - also SMS text message
 - is it possible? Do not disturb
 - vibrate when sound off
 - in list of emergency contacts to by-pass do not disturb
 - <https://www.howtogeek.com/805989/emergency-bypass-iphone/>
 - integrate with home integration/smart speakers? Alexa “where is the supernova?”
- complexity, crucial info
 - GCN and VO events
 - skymap localization like GW app
 - stars within error region
 - prioritize for single event purpose to send users to website
 - access healpix file

SNEWS App Meeting

1. Design considerations:

- additional and personablizable info
 - location, weather
 - REFITT/GRANDMA
 - individual observer targets
 - first version of app points to website
 - richer and personalized info from emails and website
- follow-up info – communication
 - connection to Slack messaging in app?
 - suggest user sign up to SNEWS Slack channel
 - Discord?
 - need pathway for casual users with high SNR?
 - need community coordination – roll call
 - some feedback when users receive alert hit “button”
 - **<I’m live> or <I’m observing>**– with observer info
 - which part of the sky is being observed
 - use feedback for diagnostics, later for individual observer targeting

SNEWS App Meeting

1. Design considerations:
 - links to SNEWS webpage/AAVSO, etc.
 - platform – IOS, Android.
 - stand alone or part of other app?
 - SNEWS communication needs stand-alone
 - size – need to keep on phone
 - needs to be used regularly by fire drills and other regular notifications
 - leverage AAVSO SN candidate monitoring
 - “candidate star-of-the-week message”
 - Include other individual astronomy or neutrino GCN notices (GRANDMA, IceCube, SuperK)
 - focus on SNEWS, but point to other sources
 - design of layout/user experience
 - need mock-ups
 - SNEWS Hack session
 - timelines for starting project??
 - contact Peter and Nicholas

SNEWS App Meeting

2. Examples

- Peter Kramers Gravitational Wave Events app
- GAIA alerts – not longer updating
- **Astro-COLIBRI** – many alerts, I am not user not fully functional
 - not loud enough
 - only carry alerts with localization
 - maybe for SNEWS 2.0

SNEWS App Meeting

- Peter Kramer's Gravitational Wave Events app



Gravitational Wave Events 4+

LIGO/Virgo alerts from GCN

Peter Kramer

Designed for iPhone

★★★★★ 4.7 • 18 Ratings

Free

- presently Apple IOS only

3. SNEWS Alert App

<https://apps.apple.com/us/app/gravitational-wave-events/id1441897107>

iPhone Screenshots



3. SNEWS Alert App

