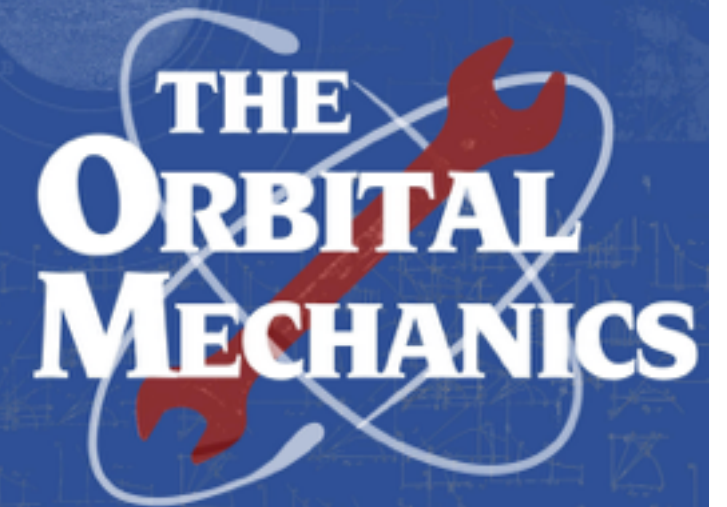
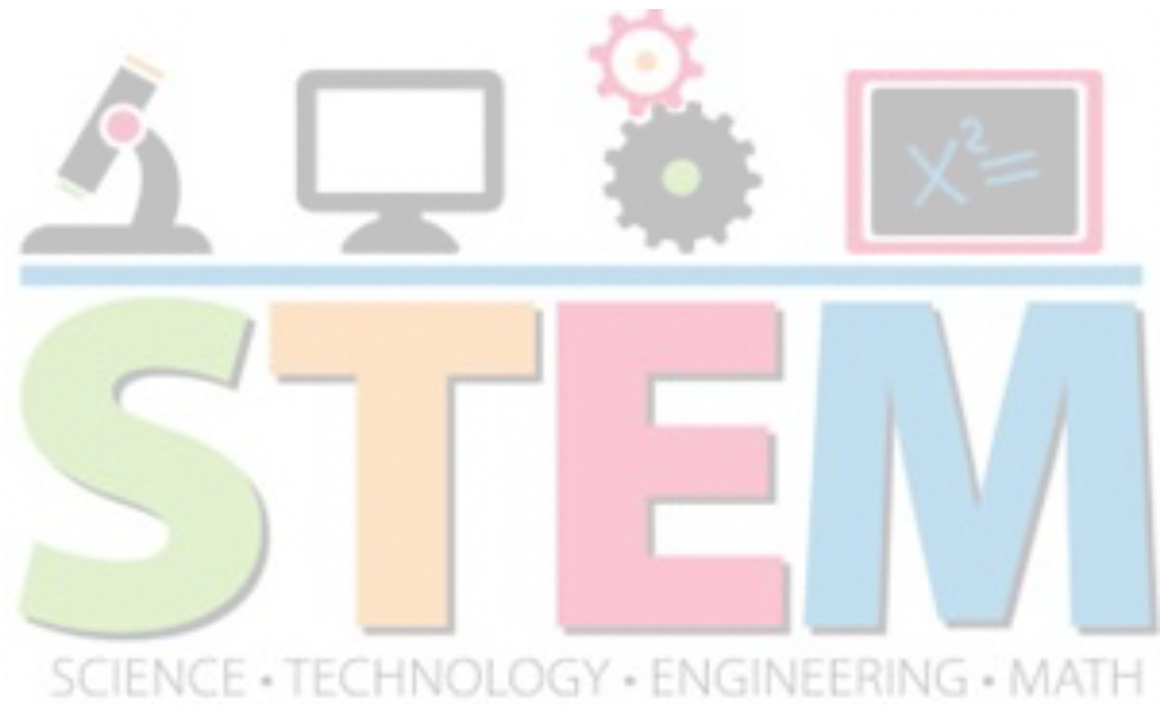


Podcasting as a medium to share STEAM fields

John Leeman
Shannon Dulin
Ben Etherington
David Fourman
Steve Pestana
Connor West

December 17, 2015





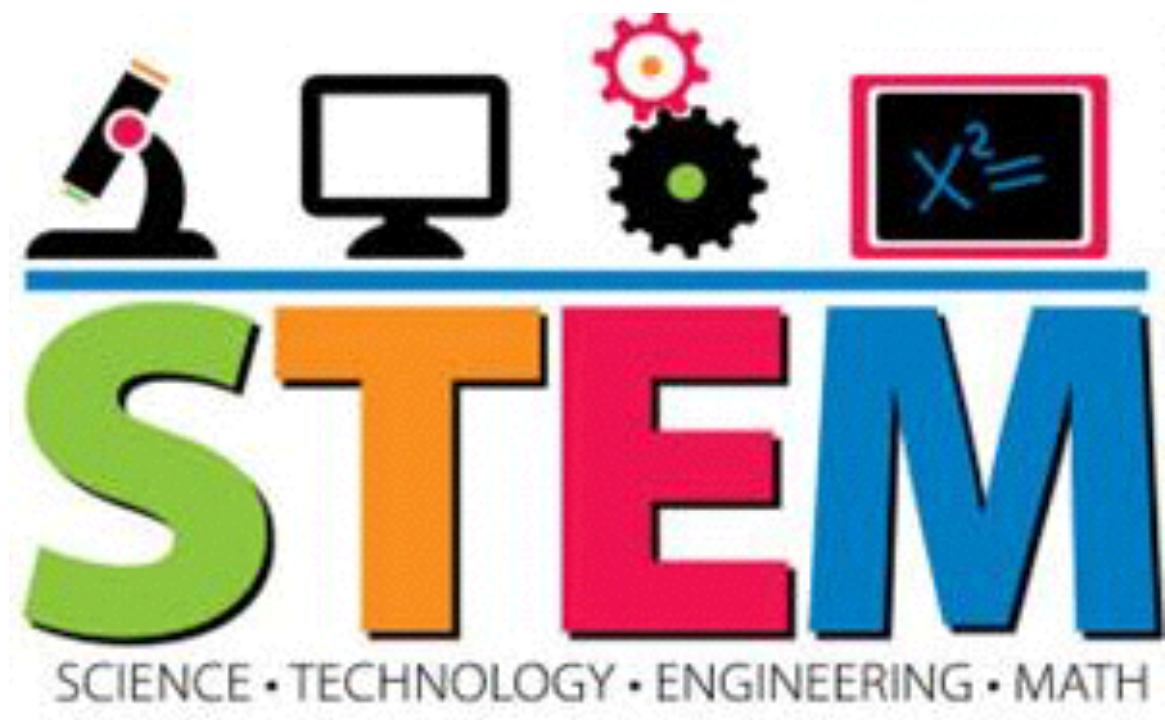
Motivations and Teams



How it Works



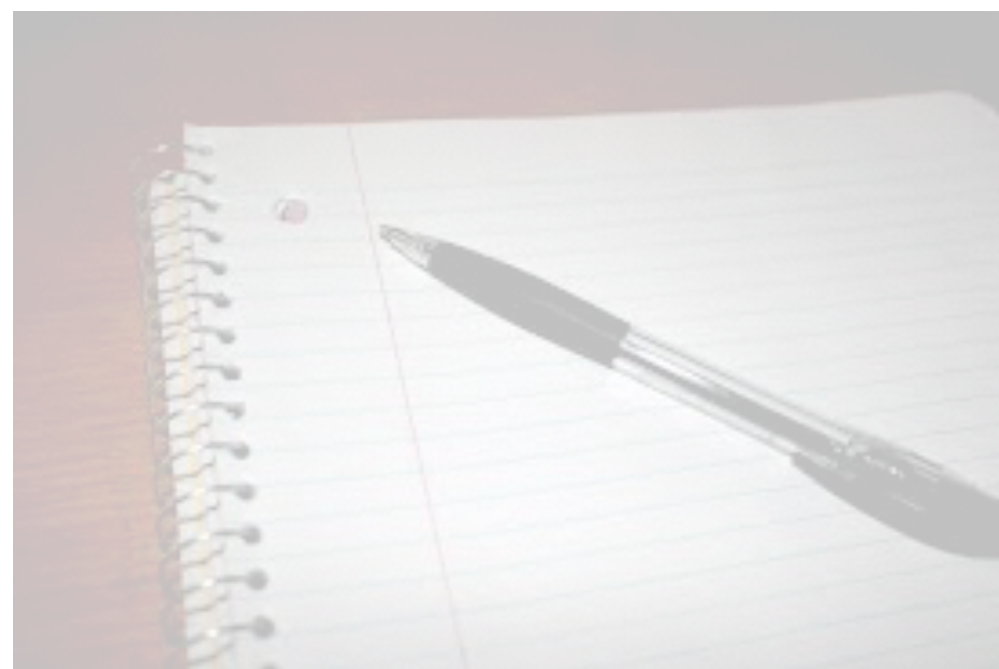
Lessons



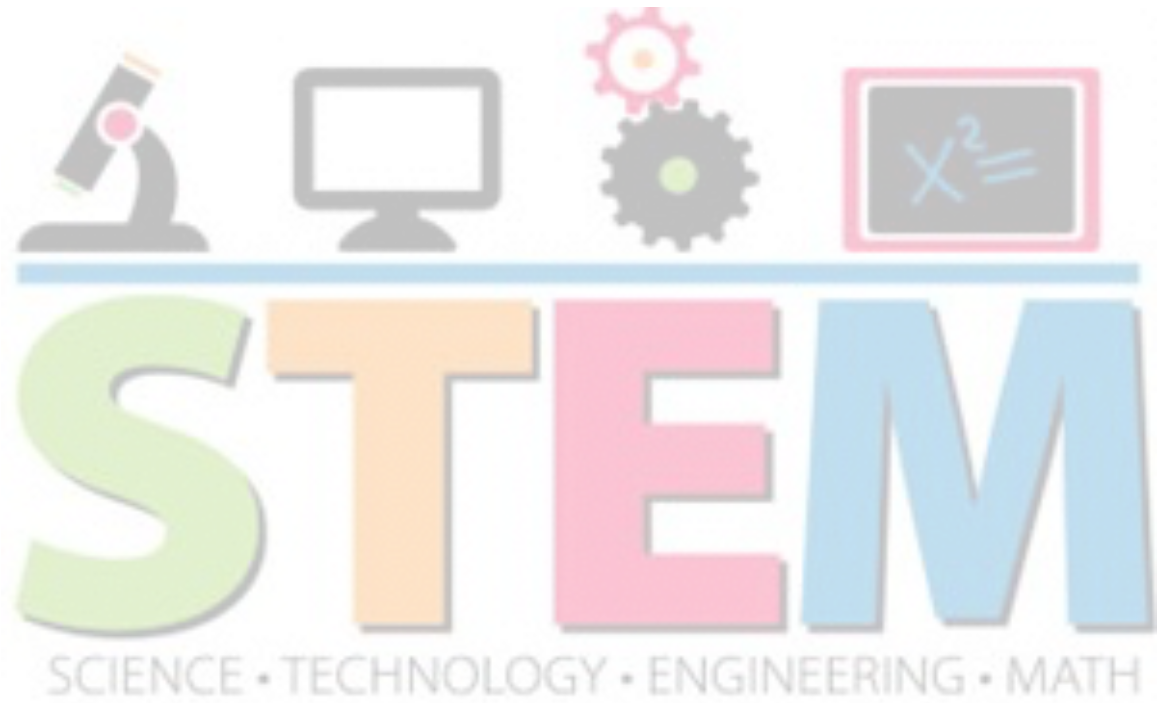
Motivations and Teams



How it Works



Lessons



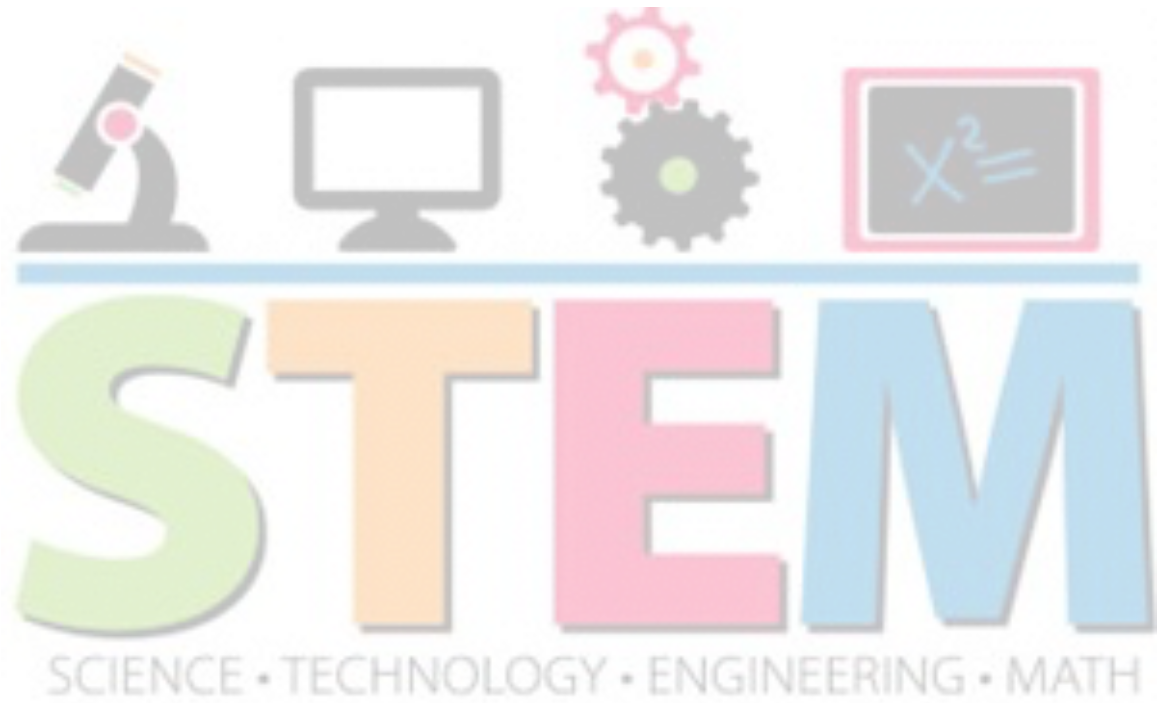
Motivations and Teams



How it Works



Lessons



Motivations and Teams



How it Works



Lessons

Meet the teams of Don't Panic and The Orbital Mechanics



Ben



David



Steve



Connor

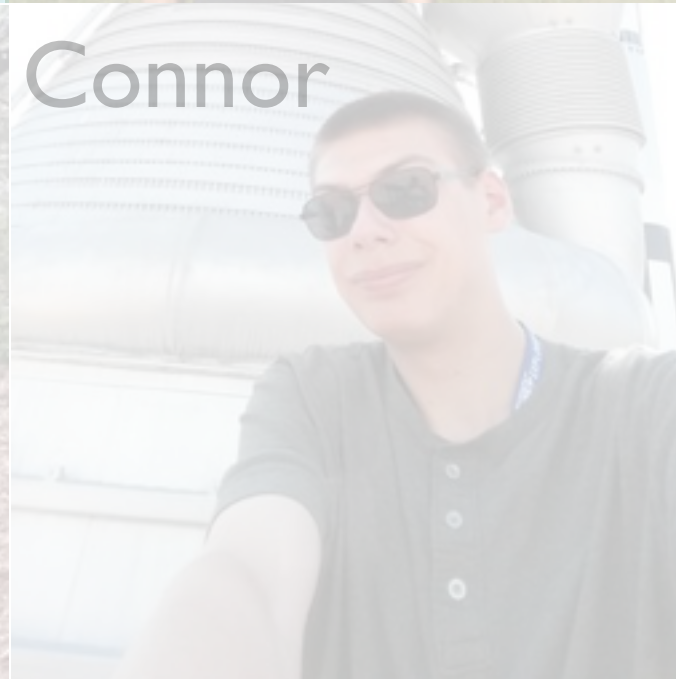


John

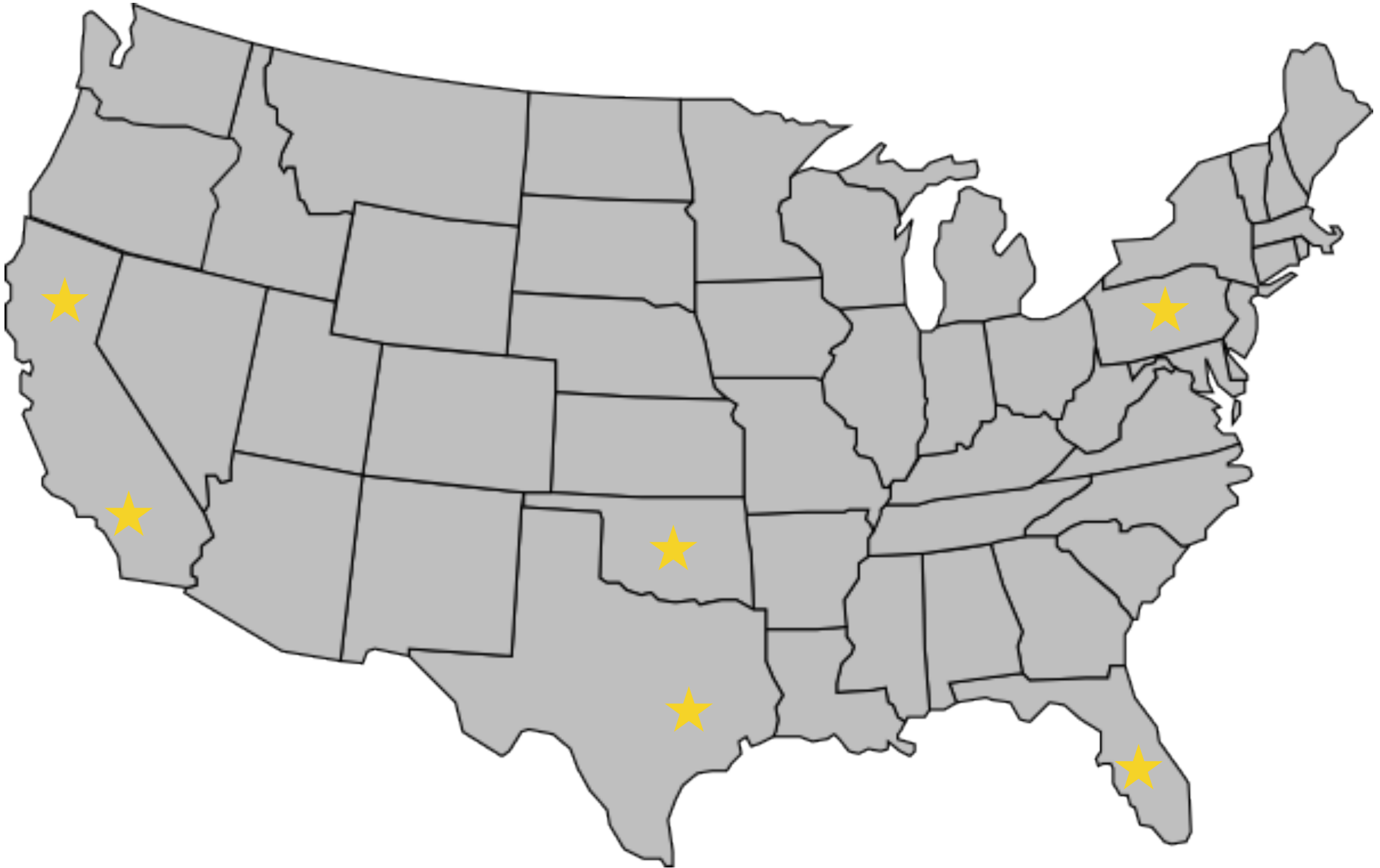


Shannon

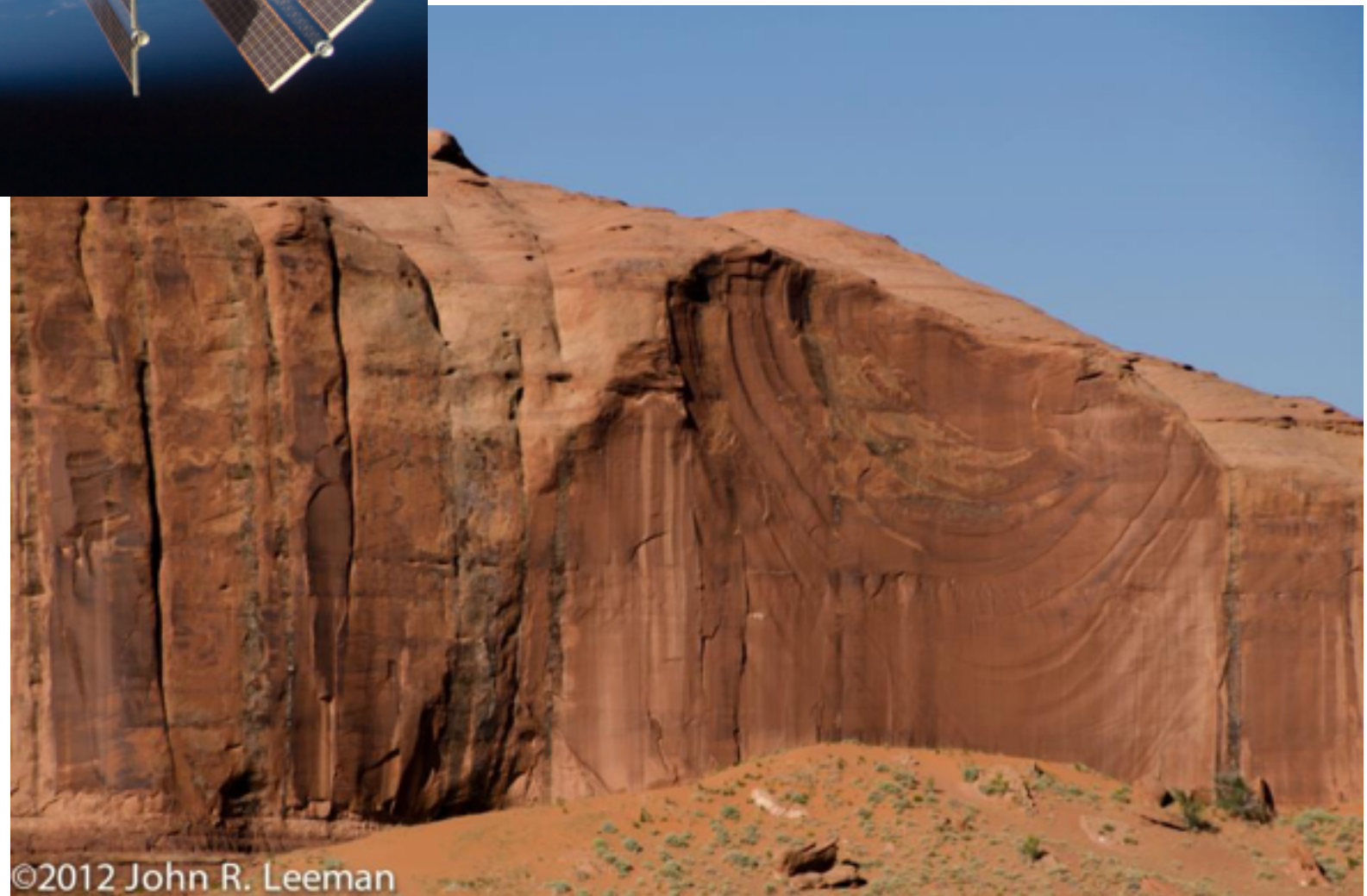
Meet the teams of Don't Panic and The Orbital Mechanics



We are spread across the USA, but our listeners are worldwide



We are passionate about our topics and the content we wanted was missing

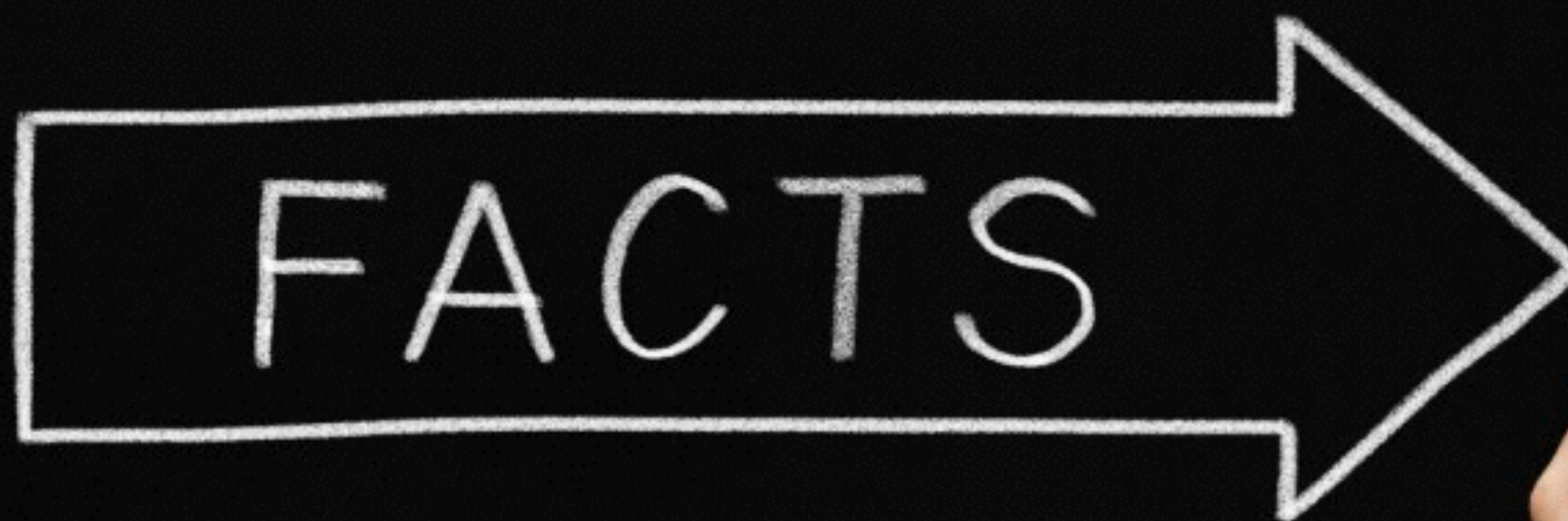


You don't need to be a scientist to do science





MYTHS



FACTS



We were already having these conversations anyway



Planning takes a long time, and content evolves



The screenshot shows a Google Docs interface with the document titled "Ep44 - Shook me all night long". The document content is as follows:

Earthquake Magnitude Scales

The Early Days

- * We needed a way to talk about how big earthquakes are quantitatively and compare them
- * Challenge is that earthquakes span a huge dynamic range. We measure ground displacements over about 9 orders of magnitude, from nanometers to about a 1m. In frequency we go from 10^{-5} Hz to 1000Hz! This is an instrumentation challenge, but that's another show entirely.
- * Want simple numbers, not huge numbers spanning orders of magnitude. Those are hard for us to look at and understand. We want 5 = moderate, 6=strong, 7=major, 8=great
- * Largest EQ since 1900 is the magnitude 9.5 Chile event of 1960.. Japan in 2011 is number 4! Those are entire other shows though.
- * We still haven't solved it, there are still problems!
- * Any magnitude scale needs to examine the amplitude of ground motion, but corrected for decreasing amplitude with distance due to attenuation, geometric spreading, etc.
- * Turns out the formulas all look like the log of amplitude over time, a distance correction, and a regional scale factor.

Richter Scale

- * In the early 30's Kiyoo Wadati noted that larger earthquakes produced greater ground motion and all ground motion decayed with distance in a similar way. This hinted at comparing sizes.
- * A local magnitude scale, (ML) that was developed for CA by Charles Richter in 1935.
- * Book: [Richter's Scale: Measure of an Earthquake, Measure of a Man](<http://amzn.com/0691128073>)
- * Developed for use with a Wood-Anderson seismometer
- * Each magnitude was a 10x jump in recorded amplitude
- * Could be computed with a Nomogram based on P-S time and amplitude!
- * Not use anymore, but is often quoted by news agencies.... Stop that! We look at earthquakes in other places than CA and Wood-Anderson seismometers are antiques (though we can apply their response curve to modern instruments)

Body Wave Magnitude

- * Computed from fast moving body waves, generally the p wave
- * A pseudo standard is the first five seconds of the arrival in the seismogram and p waves with a period of about a second

New tools let the audience become part of the shows

The Orbital Mec...
benetherington

CHANNELS (12)

blanketfort
episodes
fanmail
finances
general
interview_c
interview_j
interview_r
interviews
rss_space_news
space-hacks

DIRECT MESSAGES (13)
♥ slackbot
○ astrostevep
▲ chris_radcliff
● connorj_w
○ davidfourman
△ logan

#blanketfort Patre... 12


Today

decides on a place/time we should be sure to tweet that/post on reddit. I'll be our representative 😊 (edited)

12:55 PM benetherington Yeah for sure! Wish I could be there!

1:46 PM connorj_w <https://www.youtube.com/watch?v=bnDeJ7saLQY>

YouTube
Orbital ATK
Cygnus OA-4 Array Deploy 3FPS ▼



2:21 PM benetherington YES

3:00 PM astrostevep Beautiful

+ [input field] 😊

new messages

New tools let the audience become part of the shows

[Home](#)[Featured](#)[Sign Up](#)[Log In](#)

Recurring funding for artists and creators

Creators receive millions of dollars each month in support from their patrons

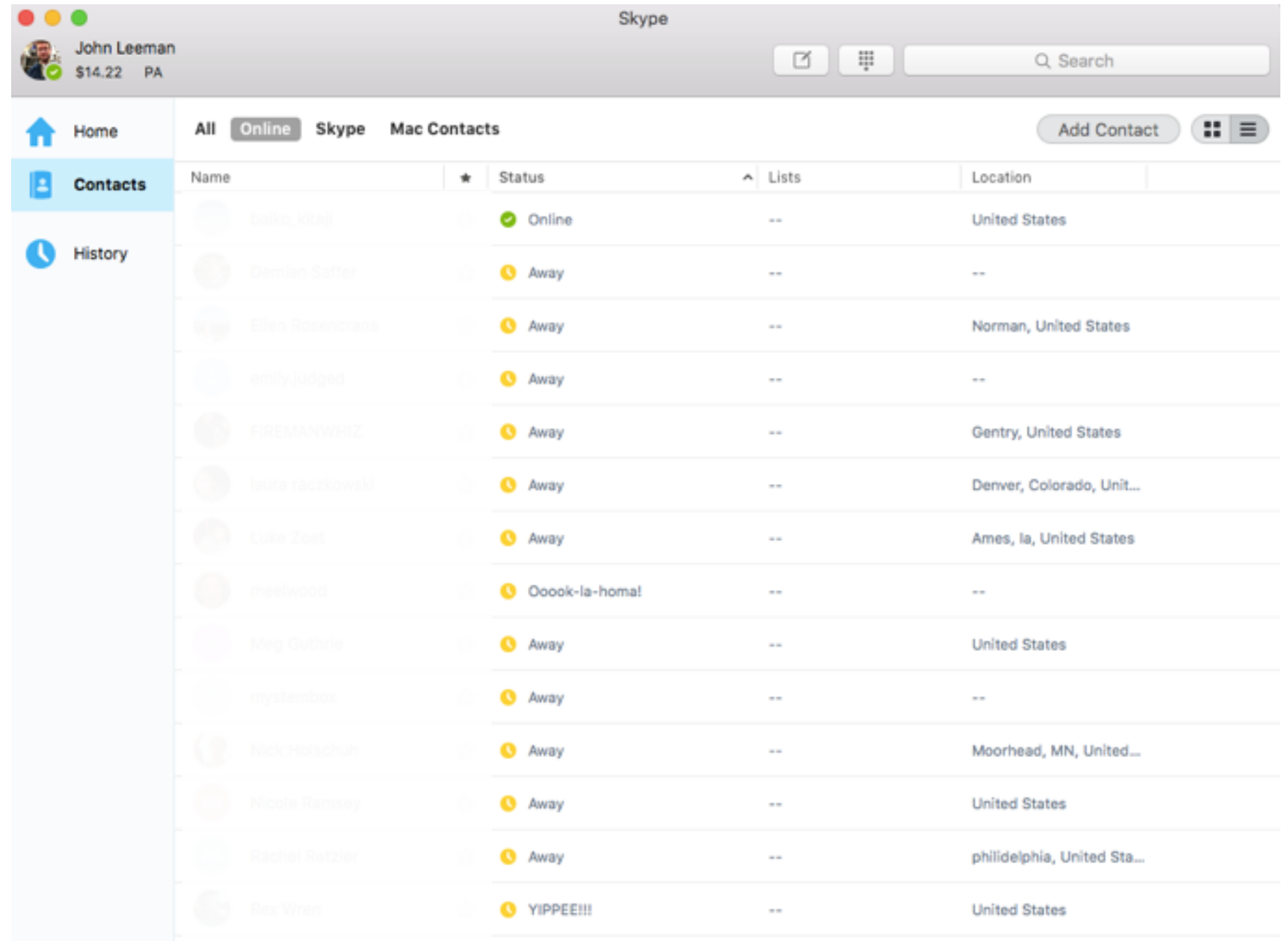
[Learn More](#)[Join Today](#)

Creator Shayla Maddox

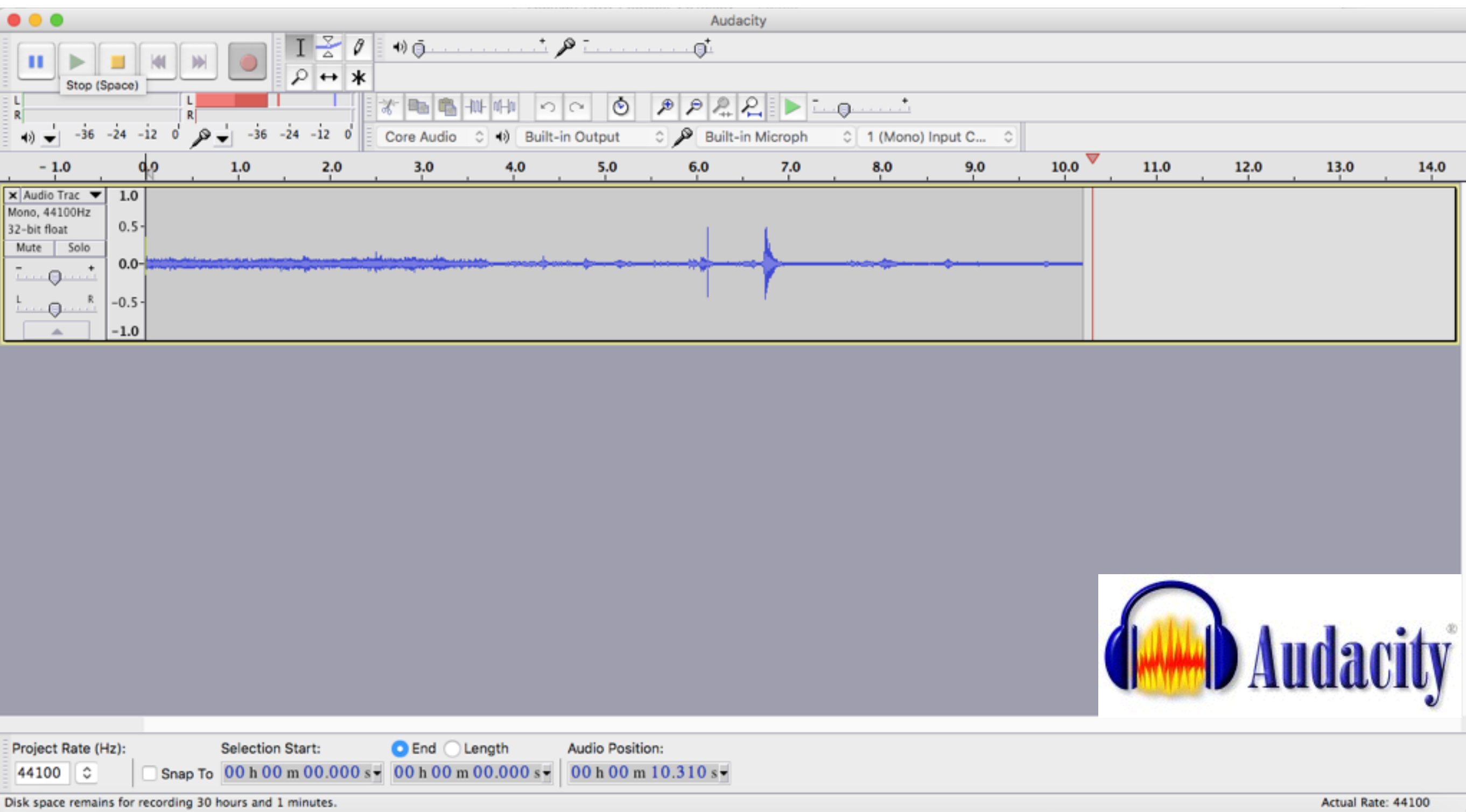
Recording is the fun, but expensive part



We use a variety of tools to record multi-track audio



We use a variety of tools to record multi-track audio



We use a variety of tools to record multi-track audio

The screenshot displays the Podcast app interface with a multi-track recording setup. The main workspace shows two input devices, 'Rode Podcaster' and 'Blue Snowball', each connected to its own 'Recorder' block. Both recorders are configured for 'MP3' at '256 kbps Stereo' and include 'Pause' and 'Split' buttons. These two tracks are then routed to a third, central 'Recorder' block, also set to 'MP3' at '256 kbps Stereo' with 'Pause' and 'Split' buttons. The right sidebar contains three sections: 'SOURCES' with 'Application', 'Input Device', and 'System Audio'; 'OUTPUTS' with 'Output Device' and 'Recorder'; and 'BUILT-IN EFFECTS' with '10 Band EQ', 'Balance', 'Bass & Treble', and 'Channel'. The bottom status bar shows a red recording indicator, a '0:00' timer, a waveform display, and the text 'Stopped Rode Podcaster + Blue Snowball to 3 formats'. A 'Recordings' button is located in the bottom right corner. An illustration of a glass bottle with a cork and a label is positioned in the bottom right corner of the image.

Podcast

Input Device
Rode Podcaster

Recorder
MP3
256 kbps Stereo
Pause Split

Input Device
Blue Snowball

Recorder
MP3
256 kbps Stereo
Pause Split

Recorder
MP3
256 kbps Stereo
Pause Split

▼ SOURCES

- Application
Capture audio from any application
- Input Device
Capture audio from a mic or other input
- System Audio
Capture all audio played on the system

▼ OUTPUTS

- Output Device
Send audio to an output
- Recorder
Record audio to files

▼ BUILT-IN EFFECTS

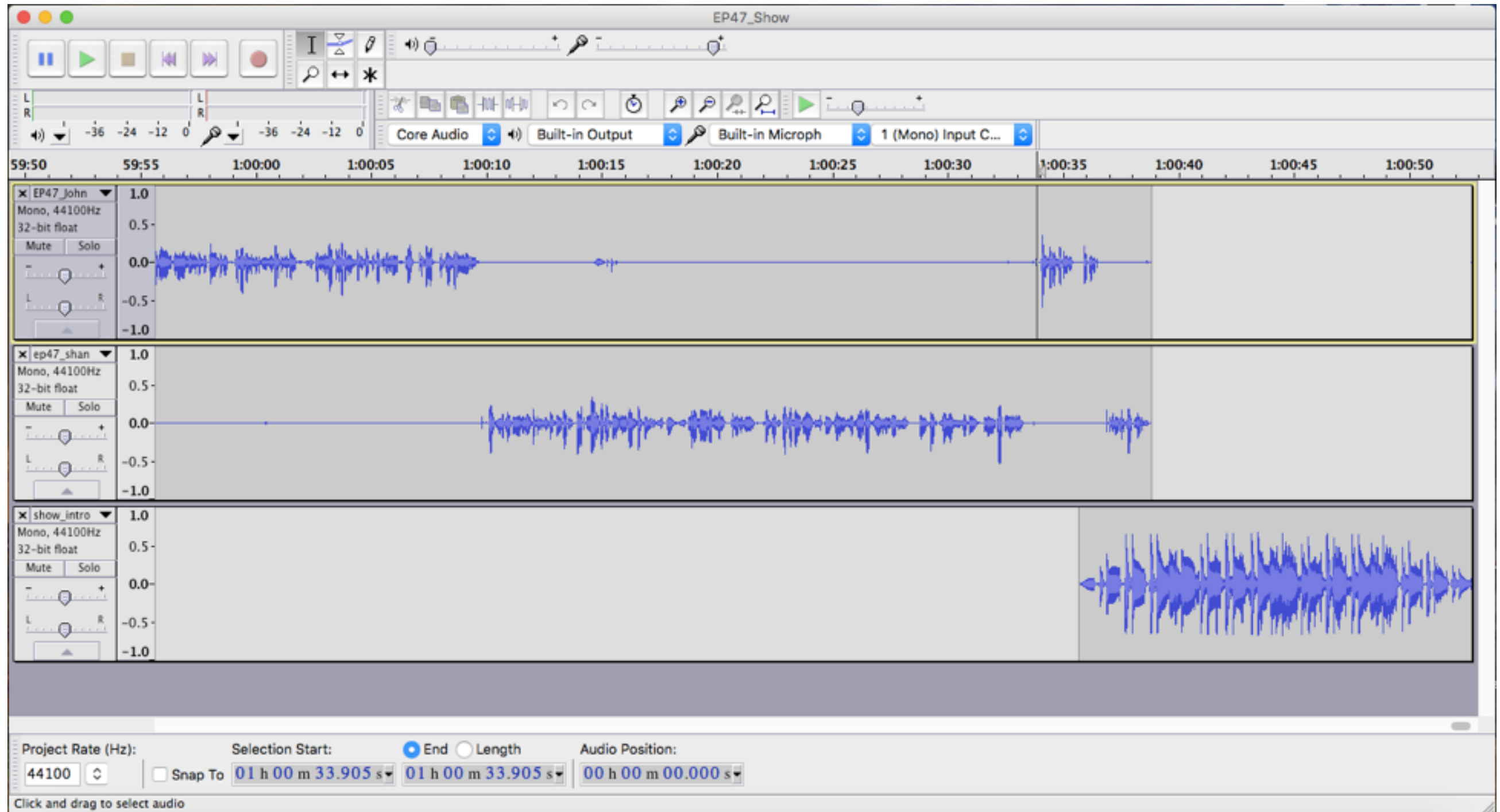
- 10 Band EQ
Fine-tune specific frequencies
- Balance
Adjust relative levels of channels
- Bass & Treble
Adjust bass and treble
- Channel

0:00

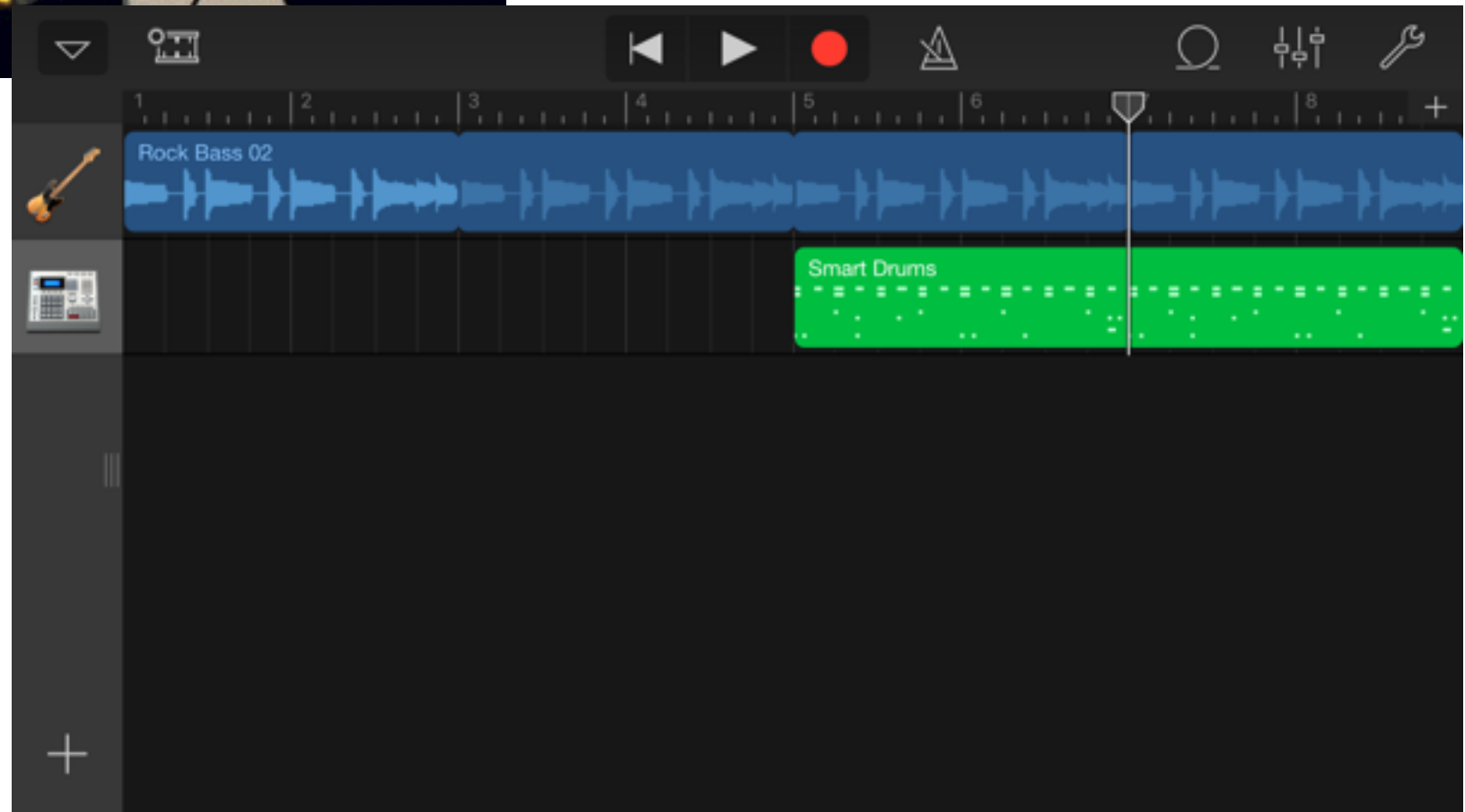
Stopped
Rode Podcaster + Blue Snowball to 3 formats

Recordings

Tracks are synchronized and cuts performed



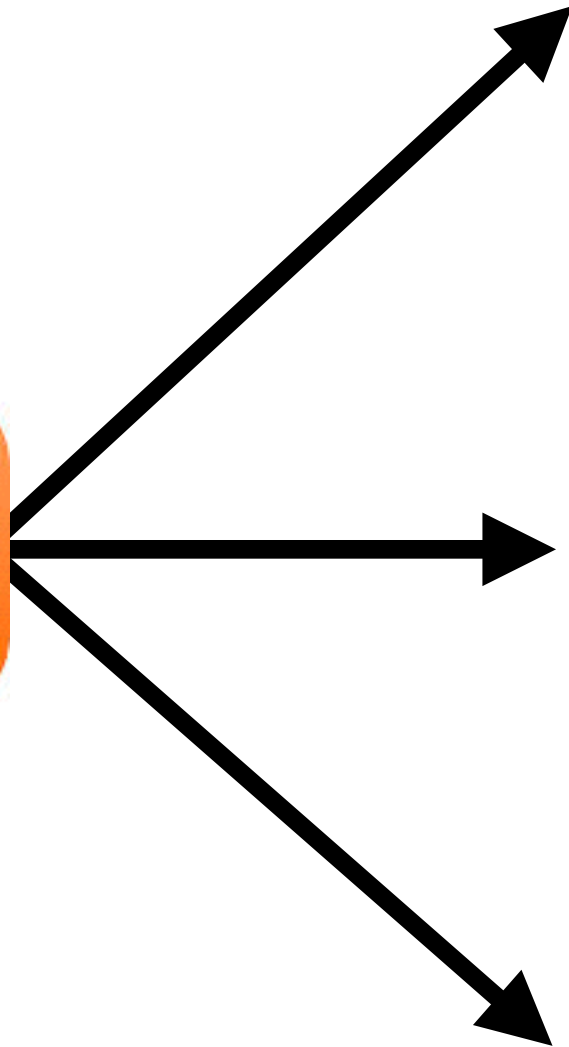
Music and transitions are added



Edited files are uploaded to the content server



Content is distributed through a large number of channels



Content is distributed though a large number of channels

iTunes Preview

Overview Music Video Charts

Don't Panic Geocast

By John Leeman and Shannon Dulin

To listen to an audio podcast, mouse over the title and click Play. Open iTunes to download and subscribe to podcasts.



[View in iTunes](#)

Free

Category: [Natural Sciences](#)
Language: English

Customer Ratings

★★★★★ 8 Ratings

Links

[Podcast Website](#)
[Report a Concern](#)

Description

John Leeman and Shannon Dulin discuss geoscience and technology weekly for your enjoyment! Features include guests, fun paper Friday selections, product reviews, and banter about recent developments. Shannon is a field geologist who tolerates technology and John is a self-proclaimed nerd that tolerates geologists.

	Name	Description	Released	Price	
1	Episode 47 - "That... CLEAN	The holiday season is ... i	12/11/2015	Free	View In iTunes ▶
2	Episode 46 - "The ... CLEAN	This week we continu... i	12/4/2015	Free	View In iTunes ▶
3	Episode 45 - Revis... CLEAN	This week we re-visit ... i	11/27/2015	Free	View In iTunes ▶
4	Episode 44 - "It's ... CLEAN	This week we talk abo... i	11/20/2015	Free	View In iTunes ▶
5	Episode 43 - "Life ... CLEAN	This week Shannon is ... i	11/13/2015	Free	View In iTunes ▶
6	Episode 42 - "Life,... CLEAN	Shannon was at the G... i	11/6/2015	Free	View In iTunes ▶
7	Episode 41 - "The ... CLEAN	This week we talk abo... i	10/30/2015	Free	View In iTunes ▶
8	Episode 40 - "Pum... CLEAN	This week Shannon tal... i	10/23/2015	Free	View In iTunes ▶
9	Episode 39 - "Ther... CLEAN	This week we talk abo... i	10/16/2015	Free	View In iTunes ▶
10	Episode 38 - "I wa... CLEAN	This week we interview... i	10/9/2015	Free	View In iTunes ▶
11	Episode 37 - "We ... CLEAN	Open Hardware Summ... i	10/2/2015	Free	View In iTunes ▶
12	Episode 36 - "We'r... CLEAN	This week special gue... i	9/25/2015	Free	View In iTunes ▶

Segments seem to be popular features

Upcoming Spaceflights



Fun Paper Friday

How to construct the perfect sandcastle

Maryam Pakpour^{1,2}, Mehdi Habibi¹, Peder Møller³ & Daniel Bonn^{2,3}

.....

The safety of pumpkin carving tools

Alexander M. Marcus, M.D.,^{a,b} Jason K. Green, B.S.,^b and Frederick W. Werner, M.M.E.^{b,*}

.....

Coffee rings and coffee disks: Physics on the edge



Interviews are also fun for all and great outreach



We have learned several important lessons this year



www.DontPanicGeocast.com



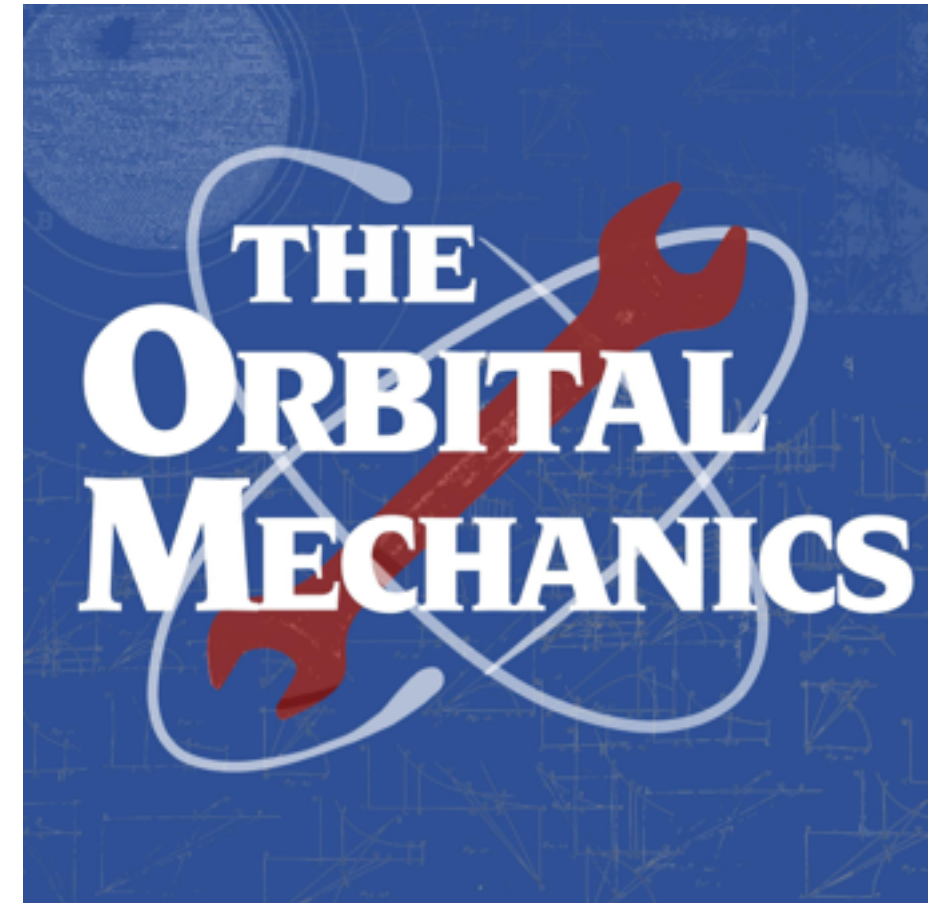
www.OrbitalPodcast.com

- Never over or under estimate the audience
- As the lines between listener and creator blur things get interesting
- Research assistants and engaged audience members are vital
- Structure & Consistency are key
- Historical shows seem to be popular
- Niche and hard to reach audiences can be found

Please subscribe and join the discussion!



www.DontPanicGeocast.com



www.OrbitalPodcast.com