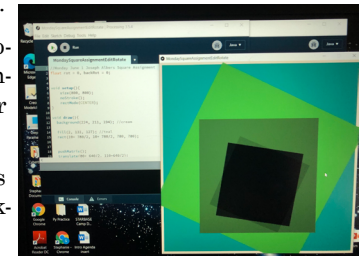
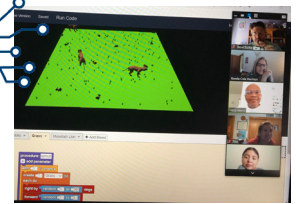




# The Rocket Report

## Virtual PED Computer Week



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In partnership with:



Collaborator:



NM Computer Science Professional Development Week was held online this year, 1-5 June 2020. The workshops were designed to teach NM educators computer science concepts and resources they can bring to their students. Our own staff even participated, virtually, in some of the workshops!

well-suited for middle school students.

Another involved learning the Python computer language; good for high school students.

A third involved block programming and bio-environmental simulations, another good middle school project.

One such workshop involved making art using software named *Processing*, an activity

Plus we learned a few things about holding virtual workshops, as well!

## Summer STEM Space Camp 2020

Zoom, zoom, zoom...We're zooming into summer, using STEM and Zoom to help us Summer STEM Camp virtually!

Delta Bravo, GalaxCrosser, and so forth.

They watched a Solar System 101 National Geographic Video, too, about the Sun and Mercury, all the way to the Oort Cloud.

Blimey, it's slimy! Bruja taught the students how to mix Borax, glitter glue, and water, creating a *chemical reaction* that produced Galaxy Slime. Students gave their slime call signs like "Buddy," "Meteor Galaxy," and "Bob."

Woodsy Owl used to say, "Give a hoot! Don't pollute!" But perhaps he should change it to,



"Give a light! Don't polite!"

Students also made their own Star Wheel, or *planisphere*, to identify constellations they see in the night sky, and got starry-eyed looking through the *kaleidoscopes* they made, learning about *engineering design* and *light refraction* in the process.

### Day 3: Mission--The Moon

*I see the moon, and the moon sees me; I see STEM here on Day 3! With an Oreo cookie; Moon phases are so tasty!*

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About 30 rising third and fourth graders teleconferenced in morning or afternoon sessions of our Summer STEM Space Camp using Zoom, 15-19 June 2020. The camp was hosted by our staff Bruja and Blossom, with support from Gemini, Spike, and Pebbles.

The space campers learned all about outer space, from the universe as a whole, down to galaxies, stars, solar systems, planets, and comets.

### Day 1: The Universe and Our Solar System

The first day, students received some Zoom instructions and selected a "call sign," such as Golduck, Crafty, Dobby, Kitkat, Unicorn Gamer,

Students also did a Virtual Space Scavenger Hunt offline.

### Day 2: What We See In the Night Sky

On the second day, students saw a video that discussed *light pollution*. Our city streetlights often scatter a lot of light into the atmosphere, which makes fainter stars hard to see.

### ZOOMing into



### Virtual Summer STEM Camp Season!



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### Important Terms and Acronyms

AF: Air Force

AFB: Air Force Base

AFRL: Air Force Research Laboratory

AFRL NM: AFRL New Mexico (AFRL/RD and AFRL/RV), on KAFB

AFRL/RD: The Directed Energy Directorate of the AFRL

AFRL/RV: The Space Vehicles Directorate of the AFRL

DoD: Department of Defense

KAFB: Kirtland Air Force Base, Albuquerque, NM

METS: Mars Exoplanet Transient Satellite (METS) Mission 2019-2020

MM: Mission to Mars

PRS: Phillips Research Site

S&Es: Scientists and Engineers

STEM: Science, Technology, Engineering, and Math

TECH: Technology and Engineering Challenges

USAF: United States Air Force

**Remember, Teachers:**  
Get those EPA  
Modification forms in!



# The Rocket Report (continued)

## Summer STEM Space Camp 2020 (continued)

Continued from page 1

The best STEM is edible STEM. Besides making phases of the moon using Oreo cookies, students also make lunar communication towers out of spaghetti and marshmallows...and now I'm hungry.



Offline, they build little lunar landers that protect a couple of stay-puf astronauts, too!

### Day 4: Astronaut Training

Things get physical when stu-



dents apply force, friction, and physics to get physically fit enough to fly through space.

Students learn how to eat like an astronaut, too. There are no refrigerators in space, so astronauts must either roll down the window and hold the food outside, or learn how to store and prepare food properly, with techniques like *dehydration* and *air-tight packaging*. Tangs a lot!

Offline, students patch things

up by designing a *mission patch*.

### Day 5: Engineering our Way to the Moon

Hey, it's not rocket science, it's just...rocket science. Kinda hard to get to the moon without rockets, so students use Newton's Laws and engineering finesse to build some small rockets and launch them at targets, and design parachutes to help them land gently.

In recognition of completing our virtual Summer STEM Space Camp, students will receive certificates of completion by e-mail. Some of the campers *this week* have siblings coming to *next week's* Summer STARBASE Camp!

## STEM Bytes

### We Want It When?

What do we want? STEM in NM. When do we want it? We want it *now*.

NM STEM Now (see [www.nmstemnow.org](http://www.nmstemnow.org)) lists some NM STEM camps and activities going on this summer, and many are *free*.



For example, there's Congressional App Challenge, LANL Physics Camp for Young Women, and New Mexico Historic Sites Virtual Summer Camp. There's also a Rockin' Around New Mexico virtual volcano tour for educators.

### STEDI As She Goes

STEDI ([www.stedi.org](http://www.stedi.org)) offers a *free* course to provide educators with helpful techniques and relevant technologies to teach their curriculum online!



Look under "Purchase Courses, Other Available Tools."

### Virtual TAI Aviation

The sky is *not* the limit for Tuskegee Airmen Inc.'s annual Youth Aviation Camp. Neither is social distancing.

The camp is going on, virtually, from 18 June-19 July 2020 for students 12-17. The "fun tube" kits are all gone, but students can still play in the "Zoom School."

### Cloudy Forecast

STARBASE is considering moving, in the future, to an online "cloud" version of PTC Creo 3-D CAD software called *Onshape*. It's all online; no downloading and installing required. Check out a sneak preview here: [www.onshape.com/edu](http://www.onshape.com/edu).



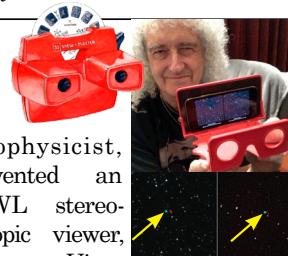
See [www.tai-albuquerque.org](http://www.tai-albuquerque.org).

### This May Be Interesting

Remember *New Horizons*, the probe that got our first closeup pics of Pluto five years ago? It's so far away now, when it takes pictures of *Star Trek's* infamous *Wolf 359* star, or *Proxima Centauri*, it gets a *parallax effect*.

Brian May, *New Horizons* as-

trophysicist, invented an OWL stereoscopic viewer, like a Viewmaster, to see it. Oh, and he's lead guitarist for *Queen*, too.



### Coming Next Issue...

- MORE summer STEM camps!
- Fall might look a bit different this year

**Watch for it!**

