

Nashua science whiz working on a number of ‘projects’



NASHUA — Move over Batman, Spider-Man and Captain America: local teenager Julie Seven Sage has her own superheroes to look up to, and they wear lab coats instead of capes.

Sage, 14, an aspiring astrophysicist, wants to follow her idols Neil deGrasse Tyson, Stephen Hawking, Cecilia Payne-Gaposchkin, Jonathan McDowell and any of the other scientific trailblazers, well-known or not that she listed off.

They’re like superheroes to me,” she said.

While she has been interested in science pretty much “*since birth,*” born into a scientifically minded family, she knew what she wanted to do with her life when she was just 6 years old, telling her dad she wanted to know about the planets and solar system.

The “*mysteriousness of it all*” had a pull for Sage from the get-go. “*We know so little about it,*” she said.

For the last eight years and counting, she has done everything in her power to fill that knowledge gap, and to help others learn about science.

Sage, who will be a freshman at Nashua High School North this fall, has already had one experiment launched into space in a sounding rocket. Two more are expected to launch in a high-altitude balloon between August and October.

Her experiments were part of the Cubes in Space program by idoodledu inc., a global competition for students to propose experiments that can fit into 4 cm cubes.

Her experiment, which launched last year, tests the differences between metal foam and solid metal when it comes to radiation absorption.

The other experiments test how voids of different shapes affect compression strength in metal foam, and how various amounts of silica can impact how much radiation is bent in different types of glass.

Sage attended RocketFest at NASA Wallops Flight Center in Virginia to watch her experiments, along with fewer than 80 others, launch into space. She was also able to meet and chat with the director.

For anyone, but particularly for a girl who lists being born “*14 years to the day after the launch of the Hubble Space Telescope*” under the “*achievements*” section of her website, this was a big moment.

Last year, Sage was also the New Hampshire merit winner of the 3M Discovery Education Young Scientist Challenge for the Sage Survival System, a water filtration and distillation device for disaster areas. She is currently tweaking it and hopes to turn it into an actual product in the future. She declined to divulge more information though, because it was one of many “*secret projects*” on which the teen is currently working.

“I have been doing a lot (this summer),” Sage said, “it has been insane.”

While grinding a mirror for the telescope she is building, working on her cube experiments and working with 19 other students and the MIT Media Lab to build a CubeSat (“*the next big thing*” in satellites, she promises), Sage is building her network.

Tentatively expected to launch by the end of the summer, her network of scientific YouTube shows will include her current science news channel, Supernova Style Science News, a maker show in which she builds things and conducts experiments and a third, concept-based show on which she explains various ideas and subjects in science.

The latter, she said, is the most exciting because she looks forward to teaching others about her passions.

STEAM, the subjects of science, technology, engineering, art and math, are important for everyone, Sage said, to help better understand the world.

Her understanding of the world, and the other planets and stars beyond, grows by the day. She is particularly interested in black holes and the theory of everything, and believes the next major development in her intended field will be picturing a black hole with the Event Horizon Telescope.

“I’m really rooting for them,” she said.

To check out Supernova Style Science News, visit the website at, www.supernovastylesciencenews.com/index.html.