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# Schenectady's Innovative Test Solutions Partners with Teachers in Space to Advance Learning Opportunities for Local Students

*Space Experiments Created by Gloversville Students Will Launch into Space After Testing from ITS Provides Clearance for the Satellite Launch*

Schenectady, NY (February 2, 2021) – Innovative Test Solutions (ITS) recently partnered with the national Teachers in Space program to provide critical integrity and durability testing for the Serenity 3u CubeSat satellite (Serenity), paving the way for experiments designed by Gloversville High School students to be conducted in outer space beginning next month.

ITS, a local company with an international reputation for excellence in materials and component testing and certification, recently certified Serenity using its proprietary aerospace materials testing procedures. Serenity is part of the Teachers in Space program whose purpose is to stimulate student interest in science, technology, engineering and mathematics (STEM) by providing teachers with extraordinary space science teaching experiences as well as industry connections.

While in orbit, Serenity will gather data for radiation experiments devised by students in Gloversville High School's "High Altitude Achievement" program.

Scott Briody, Vice President and CEO of Innovative Test Solutions (ITS) said, "There is nothing more exciting for our staff than to see the minds of future innovators open and expand through real world exposure to science and technology. We were able to bring our expertise in durability and integrity testing to the Serenity project to help ensure that when the satellite is placed into orbit it will be able to withstand the extremes of space and perform the experiments devised by students at Gloversville High School and Villanova University."

Innovative Test Solutions was approached by Teachers in Space to conduct real world stress tests, including shock and vibration testing, to simulate the rigors of orbital deployment that Serenity will experience. CubeSats are standardized, low-cost 3D printed satellites that are optimized for deployment from a number of vehicles.

Elizabeth Kennick, President of Teachers in Space commented, "ITS came through for us at a time when much of the industry was suffering from staffing and budget constraints brought about by COVID-19. The list of testing and certification requirements from Firefly Aerospace, the organization conducting the satellite launch, was extensive, and if not for ITS we may not have been able to get Serenity cleared for deployment on the satellite launch. Teachers in Space is a not-for-profit operating on a shoestring budget, and the generosity of ITS was as critical as their aerospace expertise in making this project a reality."

Chris Murphy, Director of High Altitude Balloons for Teachers In Space and Science Department Head for Gloversville Middle School said, "The radiation experiment to be conducted by Serenity is the culmination of years of research by our students. The goal of our experiment is to develop radiation resistant materials to protect flight crews and passengers aboard airplanes who are exposed to high levels of atmospheric radiation. ITS's reputation is well known throughout the aerospace world, and Capital District educational institutions are extremely fortunate to have such an amazing resource available locally."

Serenity will allow students and Ham radio operators to “ping” the satellite to receive packets of data including satellite health, battery charge, solar panel voltage, latitude and longitude information, and radiation levels. Serenity (call sign WU2M) will broadcast on the 437.1 frequency and will be powered by a small and inexpensive off-the-shelf Raspberry Pi computer that will control two radiation dosimeters, GPS and other sensors.

ITS was approached for this critical testing and certification based on their decades of experience working with the aerospace industry providing destructive and non-destructive testing of cutting-edge materials, components, products and systems; as well as ITS’s ongoing commitment to working with educational institutions to foster the next generation of innovators.

In addition to working with Teachers in Space, ITS staff frequently interact with faculty and students at area educational institutions including Union College and Hudson Valley Community College on student projects and career mentoring.

**About ITS:** Innovative Test Solutions, Inc., is a full-service mechanical engineering and testing laboratory in Schenectady, N.Y. specializing in the mechanical behavior of structures and structural material with a particular emphasis in the areas of thermal barrier coatings (TBCs), vibration, fatigue, fracture mechanics, creep/rupture, and friction and wear.

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