JCET NEWS

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Micro-satellite launched!

It may only be the size of a tall coffee mug, but the launch of Qubscout-S1 on November 21 at 2:10 a.m. represents a big leap forward for UMBC researchers who have long awaited the chance to put a satellite in space.

Qubscout-1 was propelled into a low Earth orbit from a launch site in Yasny, Russia on a Dnepr LV rocket. The satellite was built as a joint venture between the university and Science and Technology Corporation (STC) – a small high-tech company based in Hampton, VA. The satellite measures 2 inches x 2 inches by 4 inches – and it is designed to test a micro sun-sensor that can be used to find and point instruments toward the sun.

UMBC students designed, constructed and tested the sun sensor, while STC built the satellite frame and provided funding for the project. Though the project has been in the works for almost three years, changes in attached payload availability kept the Qubscout-S1 out of orbit until now.

"STC came to us with a launch opportunity in early September 2010 and asked if it was possible to put together a small satellite mission to test a sun-sensor," says J. Vanderlei Martins, JCET fellow and Associate Professor of Physics who is the principal investigator on the mission. "They needed it in about two months. Our students had already been working on small satellites, so we had the capability and know how. Nonetheless, putting something together this quickly has to be a record." Qubscout-S1 was built in 2010, but due to changes in payload availability was launched this year.

Prof. Vanderlei Martins during satellite construction

After a few months in orbit, the satellite will unfold into a larger configuration to increase its drag and change its rotation rate. The team that built the Qubscout-S1 was able to make the project cost-effective by involving students in production and by utilizing materials already available on the market.

UMBC students will also stay involved in the project by checking the performance of the Qubscout-S1sensors, monitoring data transmitted from the satellite to radio receivers at the university.

The satellite that went into orbit on November 21 also represents the fulfillment of the plan set out by JCET. "With the launch of the Qubscout satellite, JCET has now achieved all of the original goals defined when JCET was established in 1995," says Danita E. Eichenlaub, JCET's administrative director.

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This month in pictures...

Dr. Ali Tokay coordinated a poster session in collaboration with UMBC's Geography Department on November 13, 2013. The session aimed to attract new students in Earth Science Research. Among the JCET faculty members presenting were Drs. Kevin Turpie, Fred Huemmrich, Christopher Shuman, and Ali Tokay.

Dr. Freeman Hrabowski becomes newest member of UMBC's Team Comet ISON.

Pictured: left, bottom to top: Don Higdon, Roy Prouty, Jonathan Carr, Shadia Musa, right, bottom to top: Susan Hoban, Derek Fung, Freeman Hrabowski, Allie O'Malley. Image: Molly Moore

Congratulations and new arrivals

• **Laurie Cook** of the Goddard Earth Sciences Technology Center (GEST), JCET's sister center, received her PhD in Education from Morgan University, December 17, 2013.

• **Daniel Konig**, also of GEST, will receive his PhD in satellite Geodesy from the University of Karlsruhe, Germany on January 10, 2014.

• **Susan Hoban's group** was awarded a grant with the Howard County Public Library from the Institute of Library and Museum services to expand and support STEM education to the HiTech Academy.

• **Catherine Kruchten** recently joined JCET to work on out-of-school STEM education projects. Catherine is pursuing her doctorate in Informal Education at Johns Hopkins.

JCET People

Ms. Margo Young is JCET's Business Specialist for over 5 years.

This year Margo was married to her partner of 17 years. Margo is very active and this year alone, spent seven days bicycling around the Finger Lakes in NY State and ran her first half marathon. Margo likes to garden, cook, and can foods. She enjoys staying active--just like her two energetic Australian shepherds! Margo likes the challenge of figuring out how to make things herself, building, crafting, recycling/up-cycling. She is very passionate about nature and the environment.

Margo is currently pursuing her Master's in Business Administration in the University of Baltimore/Towson MBA program.

Margo takes pride in her job and enjoys working with all of the Faculty and Staff.

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