

# **Lewis Center for Educational Research Academy for Academic Excellence**

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September 25, 2007

Welcome back-to-school **GAVRT** Teachers;

Please join us as we blaze new trails to continue the celebration of our 10 years as a science education partnership. Each new school year brings important collaborations and partnerships to our **GAVRT** Program and this year is the best yet! To date students in 31 states, 13 countries, and three U.S. territories have participated in our program. We want to recognize the fact that our first **GAVRT** teacher, Kelly Bollman of Michigan, is still involved with our project. We are pleased to report that our partnership with DoDEA schools has helped improve the science achievement of their students.

**The Spitzer Space Telescope** is continuing to partner with **GAVRT** in conducting radio observations of Active Galactic Nuclei (AGN). We are excited to be expanding the opportunity for all **GAVRT** teachers to participate in a multi-wavelength approach with radio and infrared astronomy. Spitzer/ **GAVRT** teachers submitted a proposal for "live" observations with the Spitzer Space Telescope and to use its data archive. Our proposal to measure the amount of radio and infrared emissions coming from these objects and how it correlates to the size of the black holes is continuing. The consensus of teachers and scientists currently involved has decided that a larger data sample is required and thus more observations by the Spitzer Space Telescope have been scheduled. If you are interested in joining this exciting campaign we have some openings this fall for participants. Please email Kim Bunnell if you want to get started with this campaign.

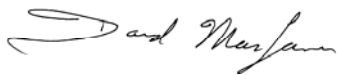
"Mark and Steve's Excellent Adventure in the Solar System" returns with a couple of "righteously smart dudes" from JPL continuing to help us understand the current unsolved mysteries and unanswered questions about our solar system. This dynamic duo will meet teachers and students via teleconferences rather than phone booths. Dr. Mark Hofstadter is **GAVRT'S** Lead Scientist and our expert on the planet Uranus. Dr. Steve Levin, JPL's **GAVRT** Research Scientist, is now the Deputy Project Scientist for the upcoming NASA Juno Mission where **GAVRT** has a key educational role. Juno is an exciting mission that will investigate how Jupiter and our solar system formed. A subset of teachers met this summer and new lessons are being developed for online use. The Juno Mission is part of NASA's New Frontiers Program. The spacecraft is scheduled for launch in 2011 and should reach Jupiter in 2016. This polar orbiter will collect data on Jupiter's gravity and magnetic fields, composition and structure of its deep atmosphere, and its aurora and magnetosphere. You can read more information on this exciting project at [www.juno.wisc.edu](http://www.juno.wisc.edu).

We are also continuing our Jupiter Quest, QVS (Quasar Variable Study), and Uranus campaigns. **GAVRT** data are assisting the scientists in their studies of these special planets and objects. In the near future, we will be launching a new curriculum manual which will feature a chapter called '**GAVRT'S** Top 10'. It will contain grade-appropriate, national standards based lessons in the top ten areas the scientists feel are most important for your students to study. Look for the new curriculum manual to be posted on our website in the very near future.

We are realizing another goal by raising the level of student participation in the data analysis. One of the most significant additions to our **GAVRT** website is our new Data Access! It allows students, teachers, and scientists to look at the data online. Our objective is to have students rate the quality of the data collected and "flag" it for an interactive discussion with the scientists. We are including a tutorial with this letter. Radio observations of quasars, planets, and their calibrators are found on our website. The data are populated as you and your students are conducting your observations in real time so there is no waiting for processing time.

We want you and your students involved with us this year, so sign up for your antenna session as soon as possible. Whether you choose to measure planets or black holes, chart your course for a successful school year.

Sincerely,

A handwritten signature in cursive script that reads "David MacLaren".

David MacLaren  
Director, Global Programs  
Lewis Center for Educational Research