

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

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Dear **GAVRT** Teacher;

As we reflect on this past year with GAVRT, it was a true 'journey' for everyone associated with the Project. We had our most successful year ever, surpassing our totals from the Cassini-JMOC Campaign of the 2000-2001 school year. Almost 4,000 students participated in conducting antenna runs or learning content lessons using our GAVRT curriculum. We are looking forward to an even brighter year while looking back on the heart-rending illness and subsequent loss of our original Chief Scientist, Dr. Michael Klein, who succumbed to cancer on May 14, 2005. On August 6, we were honored to dedicate our Operations Control Center facility as the "Michael J. Klein Mission Control Center". We were fortunate to have Dr. Klein's wife, Barbara, and his three children, Michael Jr., Tim, Kristin, and three grandchildren present for the dedication ceremony. NASA has also approved our request to dedicate our DSS-12 radio telescope as the "Michael J. Klein Radio Observatory". The acronym MJKRO would be referred to as the nickname 'MIKRO'.

As we remember the legacy of the passionate partnership between scientists and students that Dr. Klein personified, we must move forward to continue the vision and direction for the GAVRT Project that Mike shared with us. I would like to introduce Dr. Mark Hofstadter, who now has the leadership of the science side of our NASA/JPL partners. He is familiar to many of you, having participated in a number of GAVRT teacher trainings in the continental United States and overseas.

Mark states, "Hi, everyone. For those of you I haven't met yet, I'm an atmospheric scientist at JPL. I've been here almost 15 years, and use instruments on both the ground and spacecraft to study comets and planets---particularly the 'ice giant' Uranus. I've had the honor of working with Mike Klein on GAVRT since 1999 and am looking forward to an exciting year ahead. Our science-education partnership has amazing potential and I look forward to growing our ability to help you in the classroom, motivate your students, and do some first-rate science as well. And I look forward to us having some fun in the process."

To scientists Steve Levin, Mark Hofstadter, and the rest of the scientific group, the GAVRT students are part of the science team and communication within the science team is important for any scientific project. For student scientist collecting the data, it is important to understand how it will be used. For scientists using the

data, it is important to understand how it will be collected. The teleconferences are a good opportunity for students to better understand what it's like to be a professional scientist and for scientists to get the students' perspective on the GAVRT Program.

This year, GAVRT will be focusing primarily on three different scientific campaigns: Jupiter Quest, The Uranus Campaign, and the Quasar Variability Study (QVS). We will continue to monitor the synchrotron emission from energetic electrons in Jupiter's radiation belts. Your students will be able to measure Jupiter's thermal emission as well. Uranus will continue to be an object of interest. We have many unanswered questions regarding this 'ice giant'. We are looking forward to the opportunity to work with Principle Investigator Dave Jauncey in our continuing study of the variability of radio emission originating from distant quasars in space. In addition, we have had discussions about reestablishing our access to the DSS-13 radio telescope and using our 13.8 GHz package in measuring Saturn from the Earth. During the 2000 and 2001 school year, GAVRT previously used this receiver package to calibrate the passive radiometer on the Cassini spacecraft when it made an in-situ observation at Jupiter. Now that Cassini is orbiting Saturn, there is yet another opportunity for GAVRT students and teachers.

Exciting times lie ahead for our GAVRT Project. We are meeting with larger groups of scientists and discussing even more powerful ideas and concepts for GAVRT students! We are planning the implementation of a **second GAVRT radio telescope** and all the possible ways we could create educational connections using each telescope individually and in tandem on scientific campaigns. Our best days are ahead of us. We will live up to our vision of partnering scientists and students in conducting cutting edge scientific research leading to discovery!

The GAVRT Science Team and I invite you to continue to explore spatial bodies with online antenna sessions. The calendar/schedule is available for you online through December 2005. Sign up now so your students can experience GAVRT first-hand. I look forward to hearing from you soon.

Sincerely,

*Dave MacLaren*

Director, Global Programs