



GEORGIAVIEW REMOTE SENSING ACTIVITIES 2014 - 2015



EDUCATION – REMOTE SENSING AND STEM



High school students applying scientific technology skills for the humanitarian MapGive Project at the University of West Georgia on March 26, 2015



Undergraduate students presenting research at a regional conference at the University of Georgia on November 23-25, 2014



Professor Andrew Thomas teaching science at West Jackson Middle School (Mr. Will Dodd's 6th grade Physical Science classes) in Jackson County, GA, in spring 2015.

GeorgiaView promoted the importance and value of science via remote sensing and geospatial technologies to 175 students and four teachers at K-12 institutions. Dr. Seong hosted the 2015 Earth Observation Day event at the University of West Georgia. Dr. Andrew Thomas visited West Jackson Middle School and demonstrated satellite data and its connection to middle school curricular topics such as deforestation, urbanization, and regional water usage issues. Dr. Mark Patterson also gave lectures on remote sensing and science at Woodstock and River Ridge High Schools.

Dr. Doug Oetter at Georgia College and Dr. J.B. Sharma at the University of North Georgia also trained fourteen undergraduate students in land cover change assessment using archived aerial photographs and satellite imagery. Landsat datasets were critical in the students' projects, which were presented at a regional conference.

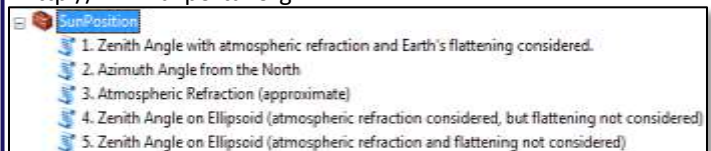
Remote sensing proved to be a very effective tool for enhancing education for K-16 students in various STEM (science, technology, engineering and math) fields and engaging them in scientific methods for real-world problem solving.

RESEARCH – SUPPORTING SUSTAINABLE GEORGIA

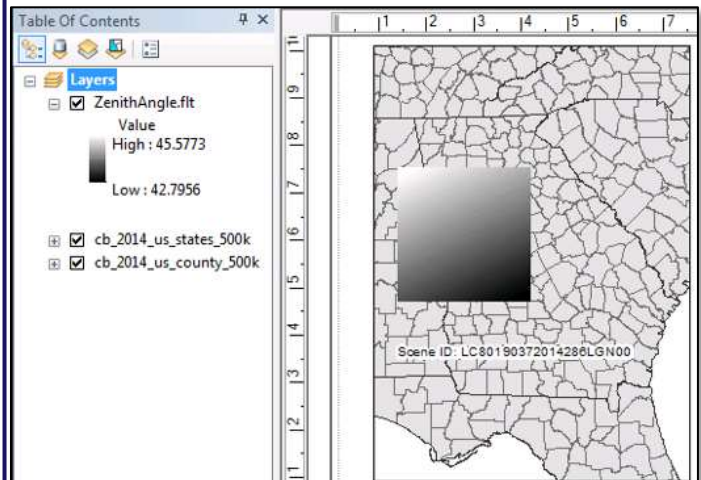
The Sun is the source of energy for living organisms on the Earth. Its position affects the Earth's climate, vegetation and seasons. In remote sensing, most sensors detect solar energy reflected from the Earth; therefore, knowing the Sun's position is critical for accurate analysis of remote sensing imagery.

In order to support Sustainable Georgia (particularly the initiatives that are solar-related such as green energy, urban heat islands, agriculture and forestry), GeorgiaView developed a computer application that allows scientists and engineers to compute solar zenith angles and sun azimuths that would match any satellite imagery such as Landsat images.

Dr. Seong published a research paper describing the application, which was titled "Sun Position Calculator (SPC) for Landsat Imagery with Geodetic Latitudes," in *Computers & Geosciences* 85 (2015) pp. 68-74. The application was also presented at the AmericaView 2015 Fall Technical meeting at the USGS EROS Center. The application is downloadable from <http://www.avportal.org>.



Sun position calculator that was implemented in ArcGISTM, the most popular geographic information system software package



An example of solar zenith angles for a Landsat 8 image that was acquired on October 13, 2014. Higher solar zenith angles indicate lower sun elevations.



BENEFITS TO GEORGIA

- Remote sensing is a very important component of geographic information science (GIScience) and is critical for urban and environmental planning/management for the State of Georgia, now and in the future.
- Workforce development for STEM disciplines such as GIScience and remote sensing is critical to the economic and environmental well-being of Georgia.
- Because remote sensing technology is experiencing rapid development and deployment, this dynamically changing field has the potential to create significant economic opportunity in the near future for a growing State like Georgia.
- GeorgiaView consortium members are skilled educators and learned scientists who are enthusiastic and collaborative in support of solutions to the demanding challenges in the State of Georgia.
- In summary, GeorgiaView projects significantly benefit Georgia by improving planning methods, promoting safety and preparedness, educating its workforce, and facilitating information delivery.



GeorgiaView helps K-16 students understand the important role of remote sensing in science and technology. This image shows Coweta County PLC high school juniors participating in an Earth Observation Day event in Carrollton, Georgia, on March 26, 2015.

GEORGIAVIEW CONSORTIUM MEMBERSHIP

The GeorgiaView Consortium is open to the public, government agencies, institutions, universities and industrial partners. The current GeorgiaView Consortium members are shown below:

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