Southwestern Adventist University

The Dinodig Project—HughesNet Satellite Broadband Aids Dinosaur Bone Diggers

Every June since 1997, Southwestern Adventist University's Dinodig Project has sent research teams to eastern Wyoming to excavate dinosaur bones. The isolated quarry site has one of the world's densest dinosaur bone beds; the remains of as many as 10,000 animals are buried there. The University is conducting world class taphonomic research, which studies the precise location of dinosaur bones, to understand how the dinosaurs died. This research requires sending data and photos from the remote site back to Southwestern Adventist University daily.

But lack of connectivity is a serious problem on a remote ranch one hour from the nearest town in the least populated county in America. Without a reliable broadband connection, it is virtually impossible for the Dinodig team to upload their findings or send important photos to the University. The diggers would otherwise have to save their research on rare species like the newly discovered Nanotyrannus lancensis, and wait months to categorize, analyze, and authenticate their findings back at the University.

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Waiting was not an option. Justin Woods, technical director for the Dinodig Project, explored a number of possible Internet services, including one-way satellite communications, but that would only get information from the University to them. To send information, he looked into installing a phone line, but that solution was cost-prohibitive. Cellular service was also eliminated as an option since the only way to get good reception was to hike up into the surrounding hills.

In 2003, Woods looked to the sky for a solution and found HughesNet® high-speed satellite Internet service. Unlike terrestrial solutions, satellite broadband does not rely on cable or phone wires, making affordable broadband services available to consumers and small businesses everywhere, regardless of geography, at speeds comparable to DSL. The compact dish needs only to have a clear view of the southern sky.

Digging for Broadband

Global positioning satellite (GPS) technology is a tool to record the positions of bones once they're found. The diggers photograph the bones, record the GPS coordinates, and then export the data to the University's campus computers in Keene, Texas. A computer program then recreates how all the bones looked in the ground. This imaging allows scientists to better depict the shape, size, and overall look of the dinosaur, which greatly aids in properly categorizing the species.

"I cannot overstate how well HughesNet is working for us, especially this season," said Woods. He is more satisfied than ever with his HughesNet service since his equipment was upgraded and his service is now delivered over the SPACEWAY® 3 satellite system, the world's first commercial satellite with onboard switching and routing. "The data collected by the scientists is irreplaceable, and the HughesNet service enables us to send daily backups to

You can follow the diggers' progress at dinodig.swau.edu

the University to ensure that all our findings are properly archived. HughesNet also gives us a way to spread the excitement of our dig to the general public and recruit new volunteers."

Utilizing their HughesNet connection, the Dinodiggers post daily video blogs on YouTube to give followers a sense of what it's really like to be on a dinosaur dig. The team also strings together hundreds of images into a single panorama that is posted to the Web in an online dinosaur museum.

"The great thing about HughesNet is that it not only keeps us in contact with our University, but it also gives us a way to keep in touch with the outside world, and most importantly, our loved ones."

Digging up the Past but Staying Connected to the Present

Broadband satellite Internet service proved to be a good recruitment and morale tool for the project as well. Prior to HughesNet, when the diggers went out on a dig, they kissed their families goodbye and spoke to them maybe once a week, since the nearest town with Internet connectivity is one hour away, and obtaining cell phone reception is a roll of the dice.

"It would be much harder to recruit volunteers if they just went into a black hole for a month," said Woods. "But with HughesNet, they can check email, go on Facebook, and talk over the phone via Skype."

Occasionally, intense weather conditions prevent work in the quarries. When this happens, many of the participants use the time to catch up on email and browse the Internet. "Even with 30 people using the system at the same time, the stability and speed of HughesNet has been great," added Woods. "The satellite link is our most vital link. It's irreplaceable."

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About Hughes

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