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Hi-tech cameras snap ancient bible

MOUNT SINAI, Egypt (Reuters) -- The world's oldest monastery plans to use high-tech cameras to shed new light on ancient Christian texts preserved for centuries within its fortress walls in the Sinai Desert.

Saint Catherine's Monastery hopes the technology will allow a fuller understanding of some of the world's earliest Christian texts, including pages from the Codex Sinaiticus — the oldest surviving bible in the world.

The technique, known as hyperspectral imaging, will use a camera to photograph the parchments at different wavelengths of light, highlighting faded texts obscured by time and later over-writings.

It should allow scholars to understand corrections made to pages of the Greek Codex Sinaiticus, written between 330 and 350 and thought to be one of 50 copies of the scriptures commissioned by Roman Emperor Constantine.

"If you look at all the corrections made by each scribe then you can come out with a principle on which he was correcting the text," said monastery librarian Father Justin.

In a joint project with the monastery, libraries in Britain, Germany and Russia, which together hold the bulk of the manuscript, will also scan pages and fragments of the text to digitally reunite the work in a facsimile.

The monastery had kept the Codex Sinaiticus until the mid-19th century, when the bulk of it was taken to Russia by a German scholar and never returned.

Russia sold those pages in 1933 to the British Library, where they are still kept.

The monks thought they had lost the entire manuscript to Europe until 1975, when they discovered 12 of its pages and 15 fragments in a forgotten chamber, buried under a collapsed ceiling with thousands of other parchment leaves and fragments.

Pages of the Codex Sinaiticus in Britain and Germany are in good enough condition to be photographed straightaway, but those in the monastery need restoration to ready them for the process.

Hyperspectral imaging will be used to read another of the monastery's most significant manuscripts -- the Codex Syriacus.

The technology should allow scholars to read the faint remnants of a washed-out 5th-century text which lie underneath visible 8th-century writing.

The underlying text in Syriac is a copy of a 2nd-century translation of the New Testament gospels.

In the late 19th century, scholars applied chemicals to the manuscript which briefly made the underlying text visible but made the parchment more brittle.

Photographing the rippled parchment may involve using up to "four cameras taking images from different angles and then knitting the image together, electronically pulling it flat because we may not be able to pull it flat physically," he said.

The technology could also be applied to read the faint traces of a script in a language only ever seen before carved in a few stone inscriptions.

It lies in the pages of a Georgian manuscript dating to the 8th or 9th century.

Father Justin, who is from Texas, has started digitizing some of the monastery's better preserved manuscripts using a camera that can take photos up to a resolution of 72 megapixels.

"When I came to Sinai I came to live in the desert. I didn't know I'd be doing computer photography and going to London four times a year," he said.

The monastery aims to have 100 manuscripts photographed and accessible through a website by mid-2006.

"Even though it's only 100 out of 3,000, it will be an important scholarly resource," he said.

Book historians are currently cataloging the condition of the manuscripts and the physical features of their bindings, 50 percent of which are original.

Conservators are even keeping the dust they brush from the manuscripts for traces of pollen or seeds which may yield evidence on how texts in languages including Persian, Amharic and Hebrew made it to the middle of the Sinai Desert.

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