

SATELLITE EVIDENCE

GRAVE CRIMES

CONTINUE IN DARFUR



SHINE
A LIGHT
50 YEARS

Central African Republic

**AMNESTY
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**SHINE
A LIGHT
50 YEARS**

Amnesty International is a global movement of 2.8 million supporters, members and activists in more than 150 countries and territories who campaign to end grave abuses of human rights. Our vision is for every person to enjoy all the rights enshrined in the Universal Declaration of Human Rights and other international human rights standards. We are independent of any government, political ideology, economic interest or religion and are funded mainly by our membership and public donations.

This publication has been produced by Amnesty International USA's Science for Human Rights Program. To find out more about the program, visit www.amnestyusa.org/science or contact science@aiusa.org.

The analysis referenced in this publication has been conducted by the Science for Human Rights program of the American Association for the Advancement of Science (AAAS) and can be accessed online at http://shr.aaas.org/geotech/darfur_2/negeha.shtml.

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INTRODUCTION

Amnesty International continues to collect evidence on the atrocities committed in Darfur through all means possible, including the continued use of satellite technologies. As the world turned its attention to the January 2011 referendum on independence for South Sudan, Amnesty International called on the international community to address the worsening situation in Darfur. In December 2010, more than 20,000 people were displaced by government attacks, including on Dar Al Salam, Shangil Tobaya and Khor Abeche camps in north and south Darfur.

These attacks have been largely unreported and Amnesty International believes that the human rights violations carried out against civilians in Darfur are being disregarded by the international community. With the completion of the referendum, and with anticipation of the forthcoming creation of a new southern Sudanese state, Amnesty International renews its call for immediate action by

the international community to address the widespread violations of international law in Darfur.

THE EXAMPLE OF THE NEGEHA REGION, SOUTH DARFUR

The Negeha region of South Darfur was identified “at-risk” in the Eyes on Darfur project, and based on new reports of offensives in the area in December 2010, Amnesty International, working with partners at the Science and Human Rights Program at the American Association for the Advancement of Science (AAAS) sought to document any apparent violations of international law through the targeting of civilian dwellings. According to reports, the villages of Negeha and Jaghara were burned in December 2010, resulting in more than 7,000 internally displaced persons. Satellite imagery of the region was collected and compared from three time periods: December 2005, January 2010, and December 2010.

In total, 819 individual structures were identified as damaged or destroyed. Of these, 265 suffered damage between

December 2005 and January 2010, while 554 did so between January and December 2010.

METHOD OF ANALYSIS

Destroyed structures were identified by their fuzzy, undefined outlines, their dark appearance due to charring from fire, and their lack of shadows. An intact house tends to cast a darkened shadow along the wall opposite the sun. A burned structure will often have had its roof collapse and its walls crumble, meaning it will no longer cast a significant shadow. Fires may also leave the ground appearing blackened and charred from the scattering of ash. Similar evidence of violence was found throughout the Eyes on Darfur project, which analyzed imagery of several communities close to Negeha.

Satellite images included in this document have been color-corrected to aid in presentation. All analysis was completed using original, pre-color-corrected, satellite imagery.

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INDEX OF MAPS

Overview Map of Darfur, Sudan.....	5
Negeha Region: Community 1	6
Negeha Region: Community 2	7
Negeha Region: Community 3	8

Legend

Eyes on Darfur

OVERVIEW MAP OF DARFUR, SUDAN.

Labels indicate Eyes on Darfur Protective Sites.



NEGEHA REGION: COMMUNITY 1



BEFORE ATTACK

Image Date:
January 13, 2010

Above: A community of housing structures in Darfur (12.938 N, 25.355 E) as of January 13, 2010. Satellite image © 2011 GeoEye, Inc. *Below:* As of December 24, 2010, 171 structures in this community have been destroyed. The fences that once surrounded homes appear to blur into the ground, suggesting they were knocked down or suffered fire damage. (12.938 N, 25.355 E) Satellite image © 2011 DigitalGlobe, Inc. Analysis by AAAS.

AFTER ATTACK

Image Date:
December 24, 2010

NEGEHA REGION: COMMUNITY 2

BEFORE ATTACK

Image Date:
January 13, 2010

Above: Another community of housing structures in Darfur (12.894 N, 25.353 E) as of January 13, 2010. Satellite image © 2011 GeoEye, Inc. *Below:* While some of the original structures appear intact, as of December 24, 2010, 42 others have been completely destroyed. The fences that once surrounded homes appear to blur into the ground, suggesting they were knocked down or suffered fire damage. (12.894 N, 25.353 E). Satellite image © 2011 DigitalGlobe, Inc. Analysis by AAAS.

AFTER ATTACK

Image Date:
December 24, 2010



NEGEHA REGION: COMMUNITY 3



A satellite image showing a cluster of numerous small, rectangular, light-colored buildings with dark roofs, arranged in a somewhat irregular pattern. The surrounding terrain is sandy and sparsely vegetated with small green shrubs. The buildings appear well-maintained and intact.

BEFORE ATTACK

Image Date:
December 31, 2005

Above: The image above, from December 31, 2005, shows a community of intact structures. Satellite image courtesy of Google Earth and © 2011 GeoEye, Inc. *Below:* By January 13, 2010, the majority of the settlement (whitish-gray color) has been completely destroyed. (12.898 N, 25.408 E) Satellite image © 2011 GeoEye, Inc. Analysis by AAAS.



A satellite image of the same area as the top image, but showing significant destruction. A large, irregularly shaped area in the center and right portions of the settlement is now a bright, whitish-gray color, indicating that the structures have been completely destroyed. The remaining buildings are scattered and appear damaged. The surrounding terrain is the same as in the top image.

AFTER ATTACK

Image Date:
December 24, 2010

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FOR MORE INFORMATION

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