



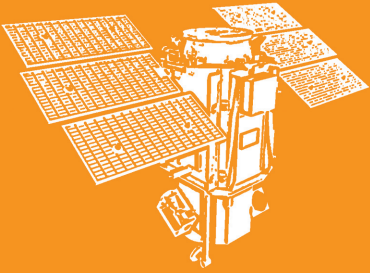
Satellite Sentinel Project

SPECIAL REPORT

SPECIAL REPORT: EVIDENCE OF BURIAL OF HUMAN REMAINS IN KADUGLI, SOUTH KORDOFAN

24 AUGUST 2011





Satellite Sentinel Project

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REPORTED BY



Harvard
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EDITOR'S NOTE

The Satellite Sentinel Project's (SSP) identification on 14 July 2011 of a cluster of white bundles in Kadugli as consistent with human remains wrapped in white plastic tarps or body bags was controversial at the time. Although publicly questioned by a US government official, it has now been established by SSP through the collection of additional imagery and eyewitness reports.

This report presents more visual evidence and new information by eyewitnesses who spoke directly to SSP of the collection and burial of human remains wrapped in tarps and/or body bags by the Sudanese Red Crescent Society (SRCS). The bundles were buried at an additional two new apparent mass graves in and around Kadugli.

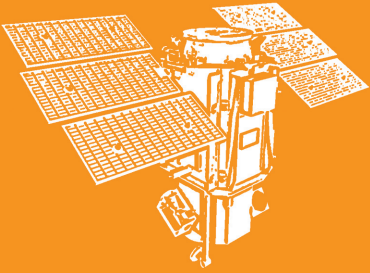
To date, SSP has identified a total of eight mass graves in and around Kadugli, as well as evidence of corpses wrapped in what appear to be body bags and/or tarps at four sites. Also, SSP's imagery of apparent mass graves has been reviewed by Stefan Schmitt, International Forensic Program Director for Physicians for Human Rights, who has concluded that the images "provide enough credible evidence to suggest the presence of mass graves."

Despite the visual evidence corroborating the eyewitness accounts, as well as images of three mounds consistent with reported mass graves nearby, the US government claimed that SSP's satellite imagery provided "no clear evidence of mass graves." In a 20 July 2011 *Washington Post* article, "US Government Cannot Confirm Mass Graves in Sudan," a US government official stated that, "What they (SSP) identify as body bags, we see those same items in those same places before the fighting started."¹ The US government has released no eyewitness report or imagery in support of its assertion.

SSP has determined, though, that these same items were not present in those same places on 7 June or 17 June or 20 July. Since the 14 July report, SSP has published reports from additional eyewitnesses who have seen corpses wrapped in what appear to be white body bags or white plastic tarps. And satellite imagery shows the dumping and subsequent burials of what appear to be white bundles of human dimensions, wrapped in some sort of tarps, and bent in the shapes of the letters "C" or "J," consistent with human bodies bent at the waist or knees, on a remote, wooded mountainside.

Statements and press releases by the International Federation of Red Cross and Red Crescent Societies (IFRC), the SRCS, and the International Committee of the Red Cross (ICRC) have also confirmed that mass body recovery and disposal operations have been occurring in Kadugli. A 1 July report released by IFRC veri-

1. Mary Beth Sheridan, Rebecca Hamilton, and Colum Lynch. "U.S. government cannot confirm mass graves in Sudan." *Washington Post* 20 July 2011. <http://wapo.st/qostco> Ambassador Princeton Lyman, US Special Envoy for Sudan, said "We can't confirm the conclusion in the Sentinel project that there are mass graves in Kadugli." Ambassador Lyman also said "we're deeply concerned" and "what [SSP] identify as body bags, we see those same items in those same places before the fighting started."



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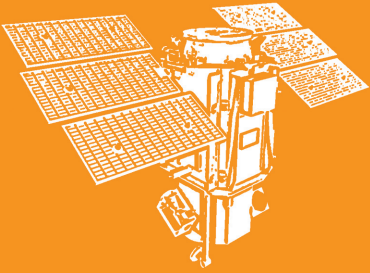
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fies that the SRCS, reportedly acting on instructions from the Government of South Kordofan, has been actively collecting dead bodies in Kadugli town, and had at least 415 body bags and 2,000 plastic tarps recently transferred to it from the IFRC prior to the fighting in June. By the end of June, the SRCS was publicly saying it needed more body bags.

This, paired with a 7 July statement by the ICRC stating that it “provided Sudanese Red Crescent emergency action teams with technical advice on the management of dead bodies, and with the body bags they needed to recover the dead,” corroborates SSP’s assertion that the white or light-colored objects are consistent with body bags. Eyewitnesses have described to SSP seeing a yellow front-end loader with a backhoe digging mass graves in and around Kadugli at sites in which an SRCS Land Cruiser and SRCS workers were also present. One eyewitness described a yellow excavator digging two pits at a site where men dressed in a manner consistent with SRCS workers subsequently threw bodies into the pits.

These eyewitness reports, obtained by SSP, are consistent with a statement to the press by the executive director of the South Kordofan branch of SCRS that the locality of Kadugli provided the SRCS corpse management team with “a loader for excavation.”

It is now two months since reports of the systematic killing of civilians in Kadugli by Government of Sudan-aligned forces first emerged. The debate continues about what further steps the US and the international community should take in response to the gross violations of human rights that have been reported. What should no longer be debated, however, is that these alleged crimes, including mass killing and subsequent mass burial of the dead, have happened and continue to occur.



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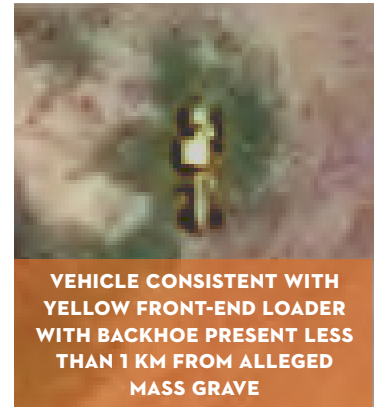
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24 AUGUST 2011 | OVERVIEW

Satellite Sentinel Project's (SSP) analysis of DigitalGlobe satellite imagery and eyewitness reports shows evidence of two additional alleged mass graves in Kadugli, South Kordofan, Sudan. This report confirms the burial of light-colored bundles consistent with bags or tarps containing human remains by Government of Sudan-aligned (GoS) forces.

Also, DigitalGlobe imagery captured on 17 and 19 August indicates that the attempted concealment of an alleged mass grave under a water tower by Government of Sudan-aligned forces appears to be ongoing.

In an appendix to this report, SSP substantiates eyewitness accounts and an August report by the United Nations High Commission for Human Rights (UNHCHR) of a visible cordon of checkpoints on almost all major roads in and out of Kadugli, trapping civilians inside a zone where systematic killing has been occurring.



1. APPARENT HUMAN REMAINS BURIED AT AN ALLEGED MASS GRAVE IN THE HILLA GADIDA AREA

FINDING | DigitalGlobe satellite imagery of the Hilla Gadida area, south of the Tilo School and east of El Gardud, shows no visibly disturbed earth in this area on either 2 June or 7 June. On 17 June, there is a pit at that location surrounded by disturbed earth. Within the pit, there is a clearly visible white bundle curved in a letter 'C' shape, consistent with a dead body bent at the waist.

On 4 July, the pit then appears to be covered with earth. Near the covered hole, there appears to be a cluster of light-colored bundles. One month later, on 4 August, there are new structures nearby and visible ground marks consistent with a tracked vehicle. New areas of disturbed earth are visible. In imagery taken on 6 August, the area of disturbed earth appears to have expanded.

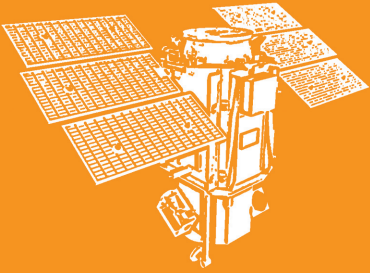
An eyewitness who spoke to SSP reported seeing a yellow excavator dig and cover mass graves in the area surrounding Tilo village. The eyewitness described a Land Cruiser with an SRCS symbol on it at one of the mass graves. The witness reported that one of these gravesites is southeast of Tilo village in the Hilla Gadida area. At this gravesite, the eyewitness observed SRCS workers bury more than 30 bodies in two freshly dug holes on 23 June.

On 25 June, an eyewitness observed two more fresh holes at this grave site, and SRCS workers throwing approximately 75 bodies into the holes. Some of the bodies were wrapped in white, plastic bags of the sort used for storing dry food products, according to the eyewitness. The eyewitness reports that the individuals, dressed as SRCS workers, then poured fuel on the bodies and burned them.

This eyewitness testimony corroborates previous eyewitness testimony, reported directly to SSP, that some human remains being buried south of Tilo village on 8 June were wrapped in white, plastic bags or light brown bags. Additionally, SSP has identified a yellow vehicle consistent with an excavator present near Tilo village, less than a kilometer from the site in the Hilla Gadida area where the bundle was apparently covered with earth.

CONCLUSION | SSP concludes that white bundles consistent with human remains wrapped in light-colored tarps have been buried in the Hilla Gadida area near Tilo village between 17 June and 4 July 2011. SSP also concludes that the area is consistent with an alleged mass grave, corroborating a report from an eyewitness who reported seeing the burial of bodies wrapped in light colored tarps or bags in the vicinity.

The apparent burial of the white bundles confirms eyewitness reports and previous imagery analyzed by SSP indicating that Government of Sudan-aligned forces are transporting and sometimes burying light-colored bundles in Kadugli. Previously identified bundles near the guest house of the Episcopal Church of Sudan and near the Hagar Al Nar neighborhood of Kadugli are consistent with the bundles identified by SSP in the Hilla Gadida area.



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2. OBJECTS CONSISTENT WITH HUMAN REMAINS BURIED AT APPARENT MASS GRAVE IN EL SHAEER

FINDING | On 17 June 2011, DigitalGlobe satellite imagery revealed several C-shaped white bundles in the locality of northern Kadugli, known as El Shaeer. This alleged mass grave site is located 1.4 km from the Central Reserve Police training camp, 1.5 km from the UNMIS compound, and 3.4 km from the Kadugli Airport. As of 4 July, updated imagery shows that the white bundles have been moved from their previous position and a new circle of disturbed earth consistent with a slightly recessed hole and earth-covered objects in its center appears at the site. By 6 August, more irregularly-shaped white bundles are placed in the center of the hole, with more white bundles on the ground outside of the hole. Satellite imagery then shows that by 19 August, the hole has been covered completely.

CONCLUSION | SSP concludes, based on an analysis of DigitalGlobe satellite imagery, that white bundles consistent with human remains wrapped in body bags and/or white tarps have been buried at an apparent mass grave site in the El Shaeer locality of northern Kadugli.

3. MURTA WATER TOWER NEAR ALLEGED MASS GRAVE REPOSITIONED

FINDING | Additional satellite imagery of the Murta water tower captured by DigitalGlobe on 17 August and 19 August, presented for the first time in this report, shows that the water tower has again moved from its previous position in two additional instances. Just as in the 4 August imagery released on 17 August, an object consistent with a large pit is clearly visible at the spot where the water tower stood previously. The position of the water tower is different from the 4 August position, the last time the water tower appeared to have been visibly moved, in the case of both images. As stated in the report released 17 August, SSP sources alleged that there was a mass grave in close proximity to the water tower.

CONCLUSION | SSP concludes that Government of Sudan-aligned forces appear to be continuing to move the position of the water tower in the Murta area of Kadugli as recently as 19 August. This continuing repositioning of the water tower on and off a clearly visible object consistent with a pit suggests that the attempted concealment of the disposal of human remains may be continuing in Kadugli.

Additionally, this imagery raises the strong likelihood that the forces who control that facility may have repeatedly attempted to conceal the act of disposing human remains at that location. SSP also concludes, as it did in the 17 August SSP report, that the dark object near the water tower is clearly consistent with a pit. Through analysis of the off-nadir angles of the satellites at the time the images were captured, the object consistent with a large pit does not move position, nor does it appear to be in any way the result of a shadow or any other visual effect.

ABOUT THE PROJECT

Satellite Sentinel Project conducts regular, intensive monitoring of Sudan to assess the current human security situation and identify potential threats to civilians.

Analysis prepared by Harvard Humanitarian Initiative. Imagery and additional analysis provided by DigitalGlobe. Bottom cover image from razed village of Todach provided by Tim Freccia for the Enough Project.



2 JUNE

7 JUNE

17 JUNE

4 JULY

4 AUGUST

6 AUGUST

NO DISTURBED
EARTH VISIBLE

NO DISTURBED EARTH
VISIBLE AFTER FIGHTING
COMMENCED ON 5 JUNE

C-SHAPED
BUNDLE

FIRST
CLEARLY VISIBLE
DISTURBED EARTH

POSSIBLE
BUNDLE
CLUSTER

WHITE BUNDLE
APPEARS COVERED

NEW
DISTURBED
EARTH

NEW
STRUCTURES
APPEAR

VEHICLE
TRACKING

AREA OF DISTURBED
EARTH EXPANDED

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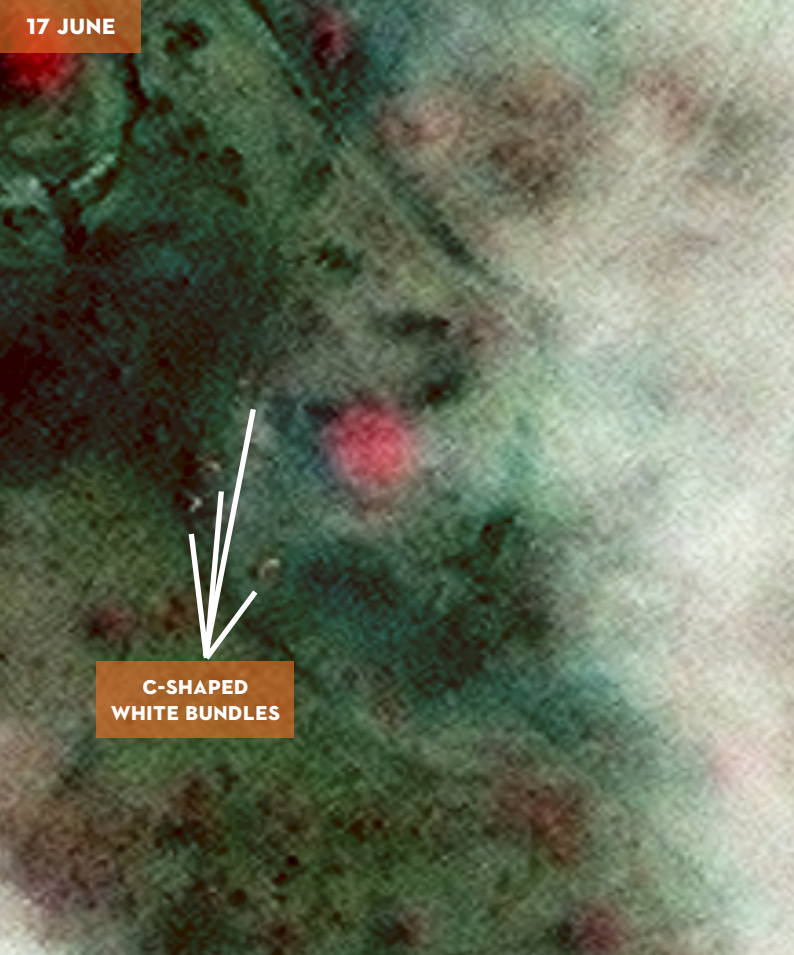
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PROGRESSION: 2 JUNE - 6 AUGUST 2011 | FIG 1
APPARENT MASS GRAVE SITE NEAR TILO SCHOOL | KADUGLI, SOUTH KORDOFAN

17 JUNE



4 JULY



6 AUGUST



19 AUGUST



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PROGRESSION: 17 JUNE - 19 AUGUST 2011 | FIG 2

OBJECTS CONSISTENT WITH HUMAN REMAINS BURIED AT APPARENT MASS GRAVE | EL SHAEER, SOUTH KORDOFAN

2 JUNE



4 JULY



4 AUGUST



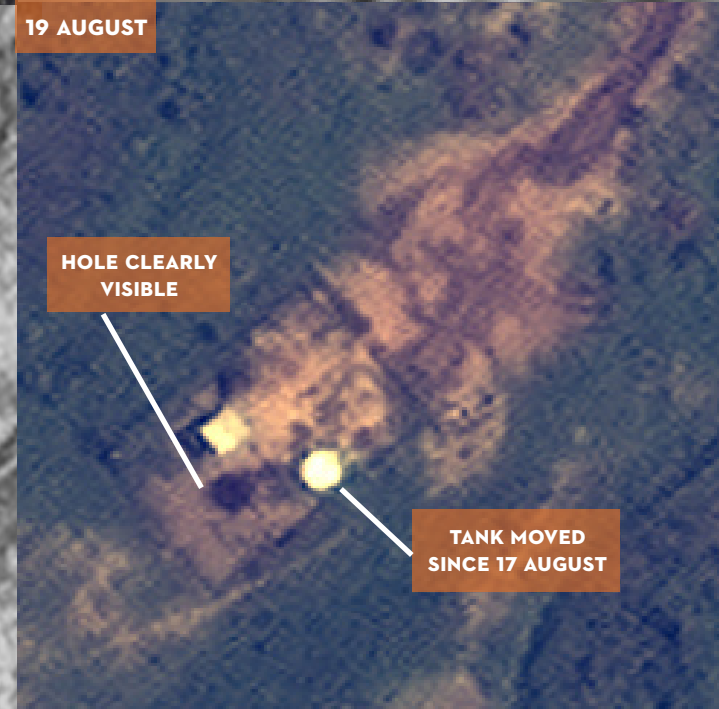
6 AUGUST



17 AUGUST



19 AUGUST



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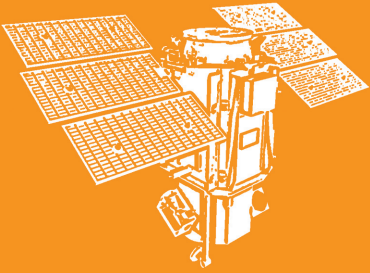
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PROGRESSION: 2 JUNE - 19 AUGUST 2011 | FIG 3
ATTEMPTED CONCEALMENT OF ALLEGED MASS GRAVE IN MURTA AREA | KADUGLI, SOUTH KORDOFAN



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APPENDIX A — NO ESCAPE: EVIDENCE OF A MILITARY CORDON IN AND AROUND KADUGLI

FINDINGS | DigitalGlobe satellite imagery analyzed by SSP shows at least six clearly visible positions consistent with Sudan Armed Forces-aligned (SAF) checkpoints reportedly established in and around Kadugli. As of 17 June, DigitalGlobe imagery shows six checkpoints, 3 of which are fortified, including one with vehicles consistent with main battle tanks, established on main roads leading in and out of Kadugli.

1. On 17 June and 6 August, two armored vehicles consistent with T-55 main battle tanks are present at an apparent checkpoint 1.9 km south of SAF 14th Division base. Multiple structures and a road block are present in the center of the checkpoint.
2. Further south of the SAF 14th Division base, at a distance of 3.9 km, is a second apparent checkpoint along the road leading out of Kadugli. Fighting positions are visible along the perimeter of the more southern checkpoint.
3. DigitalGlobe satellite imagery confirms a checkpoint 0.75 km northeast of the SAF 14th Division base that showed signs of refortification on both 17 June and 6 August. Also multiple structures and light technical vehicles are present within the fortifications. Possible fighting positions are located outside the fortification.
4. Light technical vehicles consistent with those used by SAF and Popular Defense Force (PDF) militias are positioned on the bridge connecting Kadugli town to El Gardud and Tilo. This is consistent with multiple eye witness reports of the bridge to Kadugli being used as a choke point by SAF forces.
5. An apparent checkpoint with tent-like structures and light vehicles present is positioned approximately 300 meters behind the school in the village of Tilo, on the road leading east out of Kadugli.
6. DigitalGlobe satellite images confirm another apparent checkpoint 1 km north of Kadugli airport, on the road between Kadugli and the airport. A second checkpoint is stationed at the airport.

CONCLUSION | DigitalGlobe imagery analyzed by SSP substantiates the claim made in Section 8 of the UNHCHR August 2011 report that SAF blocked all major roads in and around Kadugli starting on 5 June. The apparent checkpoints also corroborate confidential sources that have communicated directly to SSP that civilians are trapped inside Kadugli, unable to escape the town. Section 14 of the UNHCHR report cites sources claiming that military roadblocks prevented ambulances from reaching wounded civilians in need of medical care, which could constitute a violation of the Geneva Conventions and other international humanitarian law.

SSP analysis substantiates claims in Section 21 of the UNHCHR report that a check point is present near the Kadugli airport. A group of Nuba males, according to the report, were killed after being detained at a checkpoint near the Kadugli airport. Also, Section 33 states that, according to several sources, SAF detained a priest and two church members on 9 June at a checkpoint near the Kadugli airport.

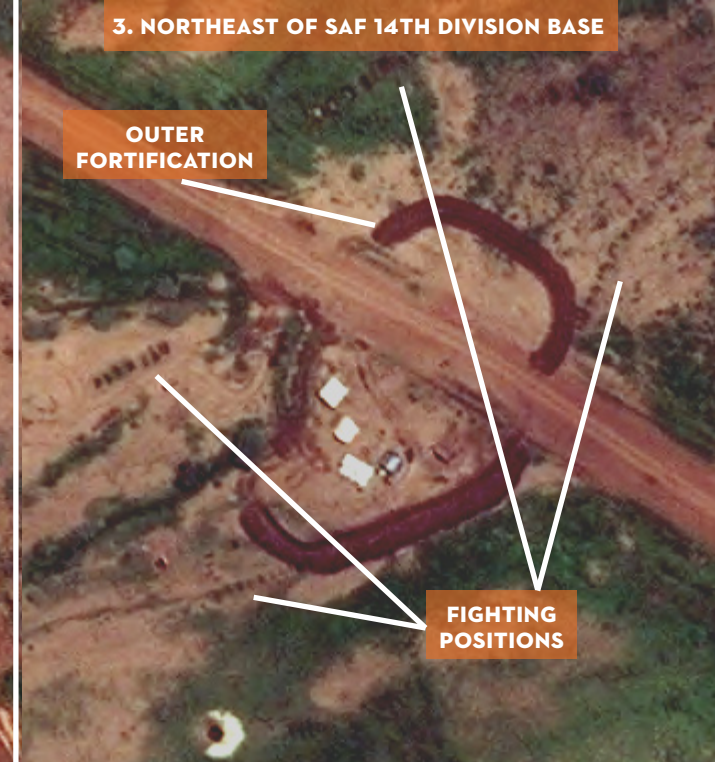
1. SOUTH OF SAF 14TH DIVISION BASE



2. SOUTH OF SAF 14TH DIVISION BASE



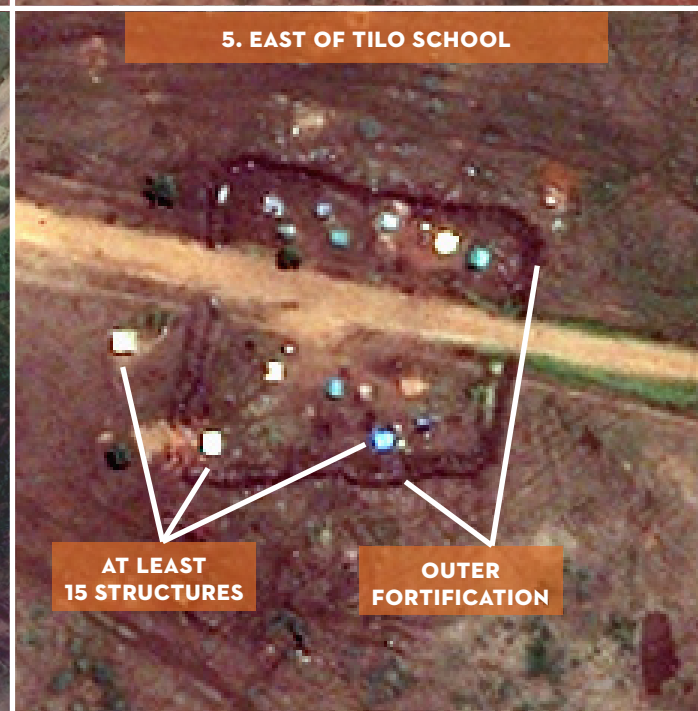
3. NORTHEAST OF SAF 14TH DIVISION BASE



4. EL GARDUD BRIDGE CHECKPOINT



5. EAST OF TILO SCHOOL



6. NORTH OF AIRPORT

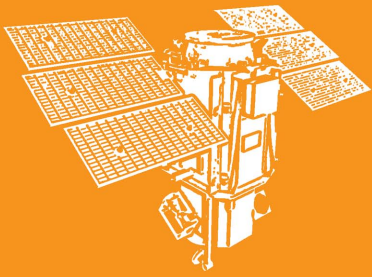


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ABOUT THE PROJECT AND THE PARTNERS

THE WORLD IS WATCHING BECAUSE YOU ARE WATCHING.

The Satellite Sentinel Project – conceived by George Clooney – combines satellite imagery analysis and field reports with Google's Map Maker technology to deter the resumption of war between North and South Sudan. The project provides an early warning system to deter mass atrocities by focusing world attention and generating rapid responses on human rights and human security concerns.

This project is the result of an unprecedented collaboration between Not On Our Watch, the Enough Project, Google, DigitalGlobe, the Harvard Humanitarian Initiative, and Trellon, LLC.

The project works like this: Commercial satellites passing over the border of northern and southern Sudan are able to capture possible threats to civilians, observe the movement of displaced people, detect bombed and razed villages, or note other evidence of pending mass violence.

Google and Trellon design the web platform for the public to easily access the images and reports. Harvard Humanitarian Initiative provides system-wide research and leads the collection, human rights analysis, and corroboration of on-the-ground reports that contextualizes the satellite imagery. The Enough Project contributes field reports, provides policy analysis, and, together with Not On Our Watch, and our Sudan Now partners, puts pressure on policymakers by urging the public to act. DigitalGlobe provides satellite imagery and additional analysis.

The Satellite Sentinel Project marks the first sustained, public effort to systematically monitor and report on potential hotspots and threats to security along a border, in near real-time (within 24-36 hours), with the aim of heading off humanitarian disaster and human rights crimes before they occur.

Not On Our Watch – co-founded by Don Cheadle, George Clooney, Matt Damon, Brad Pitt, David Pressman, and Jerry Weintraub – has provided seed money to launch the project. To support the Satellite Sentinel Project, donate at www.satsentinel.org.

Press Inquiries: Contact Jonathan Hutson at jhutson@enoughproject.org | 202.386.1618



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