

# Satellite Sentinel Project

## LAUNCH POINT: CORROBORATION OF REPORTED SAF AIR ATTACKS IN SOUTH SUDAN

HUMAN SECURITY ALERT

PREPARED BY



Harvard  
Humanitarian  
Initiative

### 15 NOVEMBER 2011

The Satellite Sentinel Project (SSP) has identified through Harvard Humanitarian Initiative's analysis of Digital-Globe satellite imagery the presence of Sudan Armed Forces (SAF) aircraft at El Obeid airbase, North Kordofan, including two Antonov AN-26 transport planes. These planes are consistent with aircraft which allegedly bombed two refugee camps on 8 and 10 November 2011 in South Sudan, according to eyewitnesses. The other aircraft present at the base as of 14 November 2011 are consistent with the following: Four Mi-24 Hinds, one Mi-17 Hip, one Yak-40, two MiG-29s and one Sukhoi Su-25.\*

The Antonov AN-26 has a potential operational range of approximately 1100 km/683.5m and an operational radius of 550 km/341.7 m. Yida camp in Unity State, South Sudan is 345 km/215 m from El Obeid; and Guffa camp in Upper Nile, South Sudan is 455 km/282 m. Both recently attacked refugee camps in South Sudan are within flying range of the AN-26 Antonovs present at El Obeid airbase.

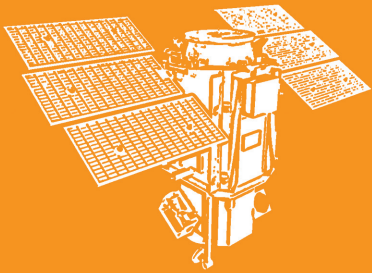
### ATTACK ON GUFFA CAMP

The aerial bombardment by SAF of the Guffa refugee camp in Upper Nile State, South Sudan allegedly occurred on 8 November. SAF reportedly launched a four-hour bombardment on the camp, killing 7 people and destroying an unknown number of structures.<sup>1</sup> The office of the United Nations High Commissioner for Refugees (UNHCR) indicated that the area is not a formal refugee camp, though approximately 400 refugees are present there.<sup>2</sup>

### ATTACK ON YIDA CAMP

Reports of the recent attack on Yida camp, which sheltered approximately 21,000 people, allege that an Antonov dropped four bombs on the camp on 10 November.<sup>2</sup> Witnesses of the bombings included journalists from Reuters and BBC. The Reuters correspondent present in Yida camp at the time of the attack reported hearing a large explosion. He reported seeing a 2 meter/6.5 feet wide crater following the explosion, as well as unexploded ordnance visibly protruding from the side of a school. He saw a white aircraft flying north after the attack.<sup>3</sup> The BBC correspondent also reported that he heard a large explosion just after a UN helicopter carrying food aid landed at the camp. He then witnessed a large plane heading north.<sup>4</sup> Samaritan's Purse, a faith-based aid organization operational at the camp, publicly reported that bombs hit a school, a marketplace, and the outskirts of the camp but did not do any significant damage or inflict casualties.<sup>5</sup>

Sudan's representative to the UN later denied that SAF had bombed these areas. The United States Ambassador to the United Nations, Susan E. Rice, responded by saying that Sudan's ambassador to the UN "blatantly lied" to the Security Council and that the bombing is "irrefutable."<sup>6</sup>



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### FINDING

SSP has identified two large, light-colored aircraft present at the SAF airbase in El Obeid, North Kordofan, Sudan on 14 November 2011 consistent with AN-26 Antonov transport planes. Several other types of military aircraft appear present there as well.

### CONCLUSION

SSP has concluded that the two large, light-colored aircraft at El Obeid are consistent with eyewitness accounts of large white or grey Antonov-type aircraft recently attacking refugee camps in South Sudan. Additionally, AN-26 Antonovs based at El Obeid are well within operational range of the Yida and Guffa camps and capable of performing such a mission. SSP has not identified other similar aircraft in range of both camps at other SAF air bases within the past few days.

**\*CORRECTION:** *In the original SSP report of 15 November 2011, two MiG-29 fighters were erroneously identified as Nanchang-Q5s. The corrected range map, figures, and text appear here.*

### SOURCES

1. Ferrie, Jared. "South Sudan Accuses al-Bashir of Planning Invasion; Denies It Backs Rebels." Bloomberg. 10 Nov 2011. Retrieved from: <http://www.bloomberg.com/news/2011-11-10/south-sudanese-president-kiir-accuses-al-bashir-of-planning-an-invasion.html>
2. "S. Sudan's Kiir blames Khartoum from violence." AFP. 10 Nov 2011. Retrieved from: [http://www.google.com/hostednews/afp/article/ALeqM5jlXaFhlzobEivOG2X7no6e\\_gU1Q?docId=CNG.4foc63687383f92d2e2672061cd48532.131](http://www.google.com/hostednews/afp/article/ALeqM5jlXaFhlzobEivOG2X7no6e_gU1Q?docId=CNG.4foc63687383f92d2e2672061cd48532.131)
3. Kron, Josh. "South Sudan Accuses Sudan of Bombing Civilian Camp Amid Fears of War." New York Times. 10 Nov 2011. Retrieved from: <http://www.nytimes.com/2011/11/11/world/africa/south-sudan-accuses-sudan-of-bombing-civilian-camp.html>
4. Holland, Hereward. "Plan bombs South Sudan refugee camp: witness." Reuters. 10 Nov 2011. Retrieved from: <http://www.reuters.com/article/2011/11/10/us-southsudan-bombing-idUSTRE7A94OI2011110>
5. "Sudan 'bombs refugees' in South Sudan's Unity state." BBC. 10 Nov 2011. Retrieved from: <http://www.bbc.co.uk/news/world-africa-15678261>
6. Weber, Katherine. "Samaritan's Purse Refugee Camp Bombed, Allegedly By Sudanese Government." The Christian Post. 14 Nov 2011. Retrieved from: <http://global.christianpost.com/news/samaritans-purse-refugee-camp-bombed-allegedly-by-sudanese-government-61693/>
7. Gladstone, Rick. "U.N. Officials Accuse Sudan of a Bombing." New York Times. 11 Nov 2011. Retrieved from: <http://www.nytimes.com/2011/11/12/world/africa/un-officials-accuse-sudan-of-bombing-south-sudan.html>

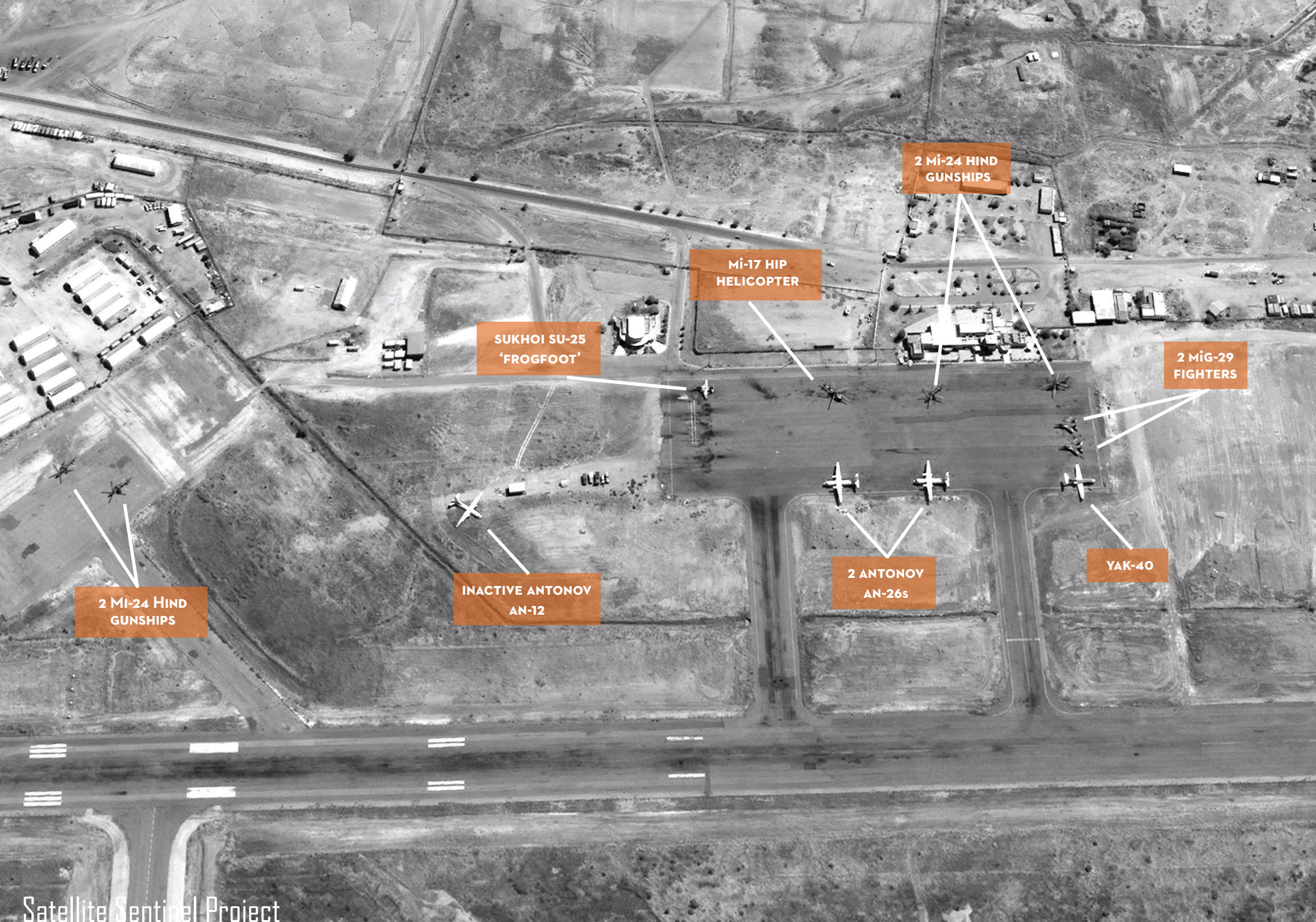
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### ABOUT THE PROJECT

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.







## STRIKE RANGES:



### MI-24 HIND GUNSHIP

POTENTIAL OPERATIONAL RANGE FROM BASE: 225 KM



### SUKHOI SU-25

POTENTIAL OPERATIONAL RANGE FROM BASE: 375 KM



### ANTONOV AN-26

POTENTIAL OPERATIONAL RANGE FROM BASE: 550 KM

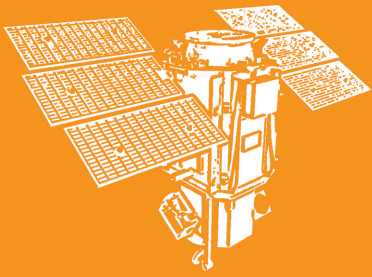


### MI-29 FIGHTER

POTENTIAL OPERATIONAL RANGE FROM BASE: 850 KM

FOR SATELLITE IMAGERY OF EACH AIRCRAFT  
VISIT: [SATSENTINEL.ORG/REPORTS](http://SATSENTINEL.ORG/REPORTS)





# Satellite Sentinel Project

## 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](http://www.satsentinel.org).

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