**Air Force Space Surveillance System**

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[](https://en.wikipedia.org/wiki/File:NAVSPASUR_Fence_2001.jpg)

Part of the master transmitter antenna at Lake Kickapoo, Texas c.2001.

The Air Force Space Surveillance System, colloquially known as the Space Fence, is a multi-static radar system that detects orbital objects passing over America. It is a component of the US space surveillance network, and is claimed to be able to detect objects as small as 10 cm (four inches) at heights up to 30,000 km (15,000 nautical miles.) Although formerly operated by the U.S. Navy and known as NAVSPASUR (short for "Naval Space Surveillance"), command passed to the Air Force 20th Space Control Squadron on October 1, 2004. The operation's headquarters are at Dahlgren, Virginia, and radar stations are spread out across the continental United States at roughly the level of the 33rd parallel north.

There are three transmitter sites in the system:

* 216.983 MHz at Lake Kickapoo, Texas (33°32′47″N 98°45′46″W﻿ / ﻿33.54639°N 98.76278°W﻿ / 33.54639; -98.76278) (Master transmitter)
* 216.97 MHz at Gila River, Arizona (33°06′32″N 112°01′45″W﻿ / ﻿33.10889°N 112.02917°W﻿ / 33.10889; -112.02917)
* 216.99 MHz at Jordan Lake, Alabama (32°39′33″N 86°15′52″W﻿ / ﻿32.65917°N 86.26444°W﻿ / 32.65917; -86.26444).

The master transmitter at Lake Kickapoo is said to be the most powerful continuous wave (CW) station in the world, at 768 kW radiated power on 216.97927 MHz Overhead imagery (see coordinates given above) of the Gila River and Jordan Lake sites suggests that the original design called for antennas of twice the present length with, presumably, greater radiated power.

There are 6 receiving stations:

* San Diego, California (32°34′42″N 116°58′11″W﻿ / ﻿32.57833°N 116.96972°W﻿ / 32.57833; -116.96972)
* Elephant Butte, New Mexico (33°26′35″N 106°59′50″W﻿ / ﻿33.44306°N 106.99722°W﻿ / 33.44306; -106.99722)
* Red River, Arkansas (33°19′48″N 93°33′01″W﻿ / ﻿33.33°N 93.55028°W﻿ / 33.33; -93.55028)
* Silver Lake, Mississippi (33°08′42″N 91°01′16″W﻿ / ﻿33.145°N 91.02111°W﻿ / 33.145; -91.02111)
* Hawkinsville, Georgia (32°17′20″N 83°32′10″W﻿ / ﻿32.28889°N 83.53611°W﻿ / 32.28889; -83.53611)
* Tattnall, Georgia (32°02′35″N 81°55′21″W﻿ / ﻿32.04306°N 81.9225°W﻿ / 32.04306; -81.9225).

The receiving stations at Elephant Butte and Hawkinsville are considered to be "High Altitude" stations with longer and more complex antenna systems that are designed to see targets at higher altitudes than the other four receiving stations.

In 2009, the operations and maintenance contract for the day-to-day management and operation of the Fence was awarded to Five Rivers Services, LLC, based out of Colorado Springs, CO. On September 30, 2011, Five Rivers Services was awarded a $7,022,503 firm fixed price with cost reimbursable line items contract modification to manage, operate, maintain, and logistically support the nine Air Force Space Surveillance System field stations, presumably for Fiscal Year 2012.

**Space Fence Program Awards contracts for Concept Development**

* 850th Electronic Systems Group, Electronic Systems Center awarded 3 $30-million contracts to Lockheed Martin, Northrop Grumman and Raytheon on 11 June 2009.
* The Space Fence is envisaged to be a system of two or three S-band ground-based radars designed to perform uncued detection, tracking and accurate measurement of orbiting space objects. The Space Fence is intended to replace the Air Force Space Surveillance System, or VHF Fence, that was transferred from the Navy to the Air Force in 2004. The shorter wavelength of the S-band Space Fence allows for detection of much smaller satellites and debris.
* The February 10th, 2009, collision of a U.S. Iridium communications satellite (Iridium 33) and a Russian Cosmos 2251 communications satellite, which added hundreds more pieces of debris to the atmosphere, highlighted the need for more precise tracking of space objects.
* Data collected from the Space Fence's sensors would potentially feed into the Joint Space Operations Center Mission System, which is used to track objects orbiting the Earth, monitor space weather and assess foreign launches. Used by operators at the 614th Air and Space Operations Center at Vandenberg Air Force Base, Calif., the 614 AOC's 24-hour-a-day, seven-day-a-week support provides vigilance of global and theater operations and equips the Joint Functional Component Command for space operations with the tools to conduct command and control of space forces.