

Re: How many satellites are in geosynchronous orbit by now?

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Source: <http://sci.tech-archive.net/Archive/sci.space.history/2005-12/msg00275.html>

- *From:* "Stuf4" <tdadamemd-spamblock-@xxxxxxxxxx>
 - *Date:* 7 Dec 2005 07:24:33 -0800
-

> The strength of a radar transmission tends to drop as the inverse of
> distance squared. This transmission bounces off an object and the
> strength of that echo tends to drop as the inverse of distance squared.
> It is the round trip taken together, and not the echo itself, that
> will have a power drop off that tends to decay as the inverse of
> distance to the fourth power.

For anyone who would like further explanation of the inverse square law, it is a simple artifact of geometry for expansion in 3-dimensional space from a point source. The classic diagram shows a candle radiating out to a square at one unit of distance, and extended to four squares at two units of distance, etc.

Here's a more elaborate version:

http://homepage.smc.edu/balm_simon/IMAGES/astro%201a/star_properties/inverse_square.jpg

For our radar situation, such a diagram could be expanded upon to show how a radar echo acts as a source in itself that emanates from the target and expands according to the inverse square law as it travels back to the receiver, yielding the round trip power attenuation governed by distance to the fourth power.

~ CT

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• *References:*

- ◆ *How many satellites are in geosynchronous orbit by now?*
◇ *From:* Soren Kuula
- ◆ *Re: How many satellites are in geosynchronous orbit by now?*
◇ *From:* Ed Kyle
- ◆ *Re: How many satellites are in geosynchronous orbit by now?*
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◇ *From:* Soren Kuula

◆ **[Re: How many satellites are in geosynchronous orbit by now?](#)**

◇ *From:* Henry Spencer

◆ **[Re: How many satellites are in geosynchronous orbit by now?](#)**

◇ *From:* Stuf4

◆ **[Re: How many satellites are in geosynchronous orbit by now?](#)**

◇ *From:* Jim Davis

◆ **[Re: How many satellites are in geosynchronous orbit by now?](#)**

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◆ **[Re: How many satellites are in geosynchronous orbit by now?](#)**

◇ *From:* Jonathan Silverlight

◆ **[Re: How many satellites are in geosynchronous orbit by now?](#)**

◇ *From:* Stuf4

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