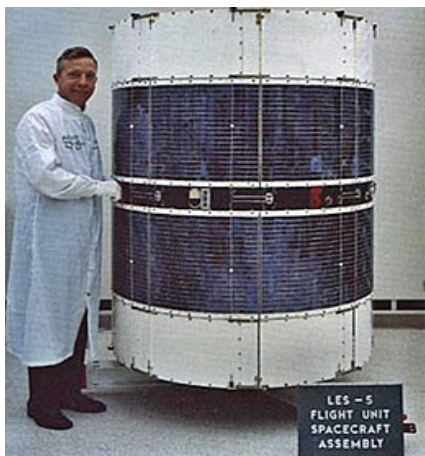


## What's News...

### Ham finds zombie satellite

When satellites orbiting Earth reach the end of their operating lives most burn up as they reenter the atmosphere but remain in space as "zombie" satellites, not alive but not totally dead either. Scott Tilley, a Canadian amateur radio operator likes to hunt them down. In 2018, he found a signal from a NASA probe called IMAGE that the space agency had lost track of in 2005 and with Tilley's help, NASA reestablished contact. He has also tracked down much older satellites like Transit 5B-5 launched in 1965, which was a nuclear-powered Navy navigation satellite that still circles the Earth.

Tilley's most recent find is LES-5 built by MIT's Lincoln Laboratory and launched in 1967. By scouring the Internet, he found a paper describing the LES-5 operating frequency and found it was still "alive". As it turns out, even though the satellite was supposed to shut down in 1972 it still operates if its solar panels are in the sun. Tilley thinks it may even be possible to send commands to the satellite.



### NRL demos power-beaming from ISS

Researchers at U.S. Naval Research Laboratory have demonstrated power beaming from space as a source

## A Word from Sam Benzacar

### Conspiracy Theories About Health Effects of RF Are Nothing New

By Sam Benzacar



As I discussed in last month's newsletter, conspiracists are having a field day, linking the source and spread of COVID-19 to everything from Bill Gates to Russia, and not surprisingly 5G, as if 5G was just one thing rather than the bewildering complexity of technologies it really is. What I did not mention is that this type of thing has happened many times before, and the supposed culprits now not been limited to cellular. After the column was published, I remembered that New Jersey where I live had its own protests, way back in the 1970s, and what transpired then has similarities today. Let me explain.

The town was Vernon Twp., a rural area in the northwestern part of the state, and RCA Americom constructed three earth to-space uplink facilities with at least 15 antennas used by Western Union (and perhaps others) beginning in 1974. Vernon (which covers more than 67 square miles is about 60 mi. from New York City and there are no other cities anywhere near it. The earth stations were located in Vernon Valley which lies between two hills about 800 ft. high, making it a great location for minimizing interference from other sources.

These were not small facilities and their EIRP at the antennas (on boresight) was as least many kilowatts of not more, but of course these antennas necessarily have very narrow beamwidths, so radiation levels drop precipitously beyond the 3-dB points to almost nothing at ground level.

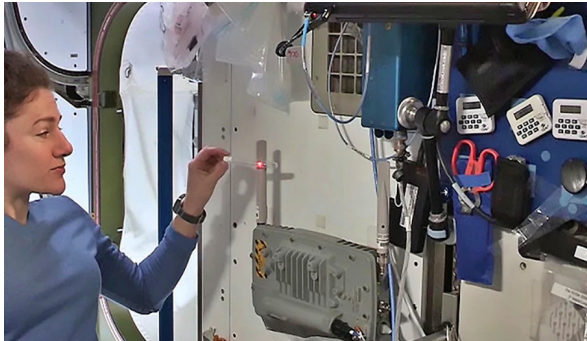
Nevertheless, a group of local residents formed Citizens Against the Towers (CAT) claimed that the radiation was causing higher-than-normal instances of Down Syndrome in the area. The issue got widespread media attention and resulted in studies with participation by the EPA, the National Institute for Occupational Safety and Health (NIOSH), the New Jersey Department of Health, the CDC, and the National Bureau of Standards (now NIST), each producing reports of their studies, which were conducted over a decade. It also resulted in many hearings in the town along with extensive media coverage as "expert" witnesses testified for and against the facilities.

In 1986, the EPA released a report stating that residents of Vernon Township were exposed to "significantly lower levels of electromagnetic fields than most Americans", about 226 pW/cm<sup>2</sup> and in some cases below the detectable lower limits of test equipment at the time. However, the EPA admitted that measurement uncertainty could be 3 dB or more—sometimes a lot more.

The CDC report in November 1985 stated that there was indeed an elevated incidence of Down's Syndrome in Vernon but normal rates of other defects and cancer. Seven cases of Down's were identified in Vernon, as compared to the 1.43

of clean energy for both military and civilian applications. International Space Station astronaut Jessica Meir recently completed the demonstration using simple components that together formed a LECTenna, a light-emitting rectifying antenna that with a few other parts converts a wireless signal into electric power.

While the current generated and light emitted was small, the setup proved the concept. One of the most interesting applications is space-based solar panel arrays that allow power to be sent wirelessly over much larger distances. Similar technology could be used to transmit energy from a space-based solar panel array in the form of microwaves harvested on the ground by a rectifying antenna.



### Army orders ground-penetrating radar for IED detection

Army counter-land mine experts have developed a ground-penetrating radar system to detect improvised explosive devices (IEDs) buried in roadways using a system built by Chemring Sensors and Electronics Systems (CSES). The Army Contracting Command at Aberdeen Proving Ground, MD, announced a \$200.2 million order to CSES to develop and build Husky Mounted Detection System (HMDS) kits, spare parts, maintenance and training. The HMDS can detect underbelly IEDs and antitank land mines buried in primary and secondary roads. The system is a combination of the CSES VISOR 2500 ground-penetrating radar and the Husky vehicle from Critical Solutions International.

The HMDS will help the Army clear roadways of antitank mines, roadside bombs, and other IEDs as it detects metallic and non-metallic explosive hazards, pressure plates, and antitank mines. It combines real-time automatic-target-recognition algorithms, integrated metallic and non-metallic threat detection, automatic precision marking, and software in a ruggedized, supportable package.

expected cases. The cluster remained unexplained as preliminary measurements made by the (EPA) noted that radiation levels were (with a few exceptions) extremely low. The odds of the cluster occurring by chance were calculated as less than 1 in 1000.



Eventually, the New Jersey Department of Health dropped its investigation for lack evidence of a continuing problem and the "apparent impossibility" of estimating past microwave exposures. CAT noted that this decision "borders criminal neglect...it's one big cover-up", and others including some of the many witnesses agreed, but NBS and other agencies disagreed.

Although I have been able to determine whether this was the end of the story, the site, now called Vernon Valley Teleport, was operated by satellite services provider SES until it was acquired by US ElectroDynamics in 1915. It covers the US, Central America, South America, Africa and Europe. So, I assume it must have resulted in a draw.

I can only imagine how this issue would have played out in the 1970s and 1980s if social media were available to spread rumors, post fake news, and generally stir up trouble.

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