

# Ron Regehr Responds:

**Skeptics UFO Newsletter (SUN #58)**

**Defense Support Satellite (DSP) article isn't accurate**

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**(Ron Regehr's) comments  
are [UPPER CASE AND IN BRACKETS]**

Because Regehr formerly was employed by Aerojet's ElectroSystems div. which produces the sensor subsystem for our DSP satellites, his knowledge of its latest design should be superior to mine.[**THANK YOU, PHIL.**]

Regehr challenges the accuracy of SUN's statement that "most of DSP's infrared sensors look down from its 22,000 mile high altitude." (Emphasis added.) Regehr states that "all of the DSP infrared sensors look down..." (Emphasis added.) My information came from a report prepared by Aerojet Electrosystems, titled "DSP Sensor Evolutionary Development," which stated that 5,568 of DSP's infrared sensors "looked" below the horizon, i.e., toward the Earth, while 768 of the infrared sensors looked above the horizon, i.e., out into space. The report said that this system was designed to replace the sensor system "presently in operation" on DSP satellites

**[INTERESTING. PHIL PROBABLY DOES NOT KNOW IT WAS I WHO WROTE THAT REPORT MANY YEARS AGO WHEN AEROJET WAS BRIEFING USAF "BLUE SHIRTS" ON THEIR NEW SYSTEM—SENSOR EVOLUTIONARY DESIGN, OR SED FOR SHORT. THE SED—SERIES OF SENSORS, FOR THE FIRST TIME, INCLUDED A FEW DETECTORS DESIGNED TO DETECT EVENTS IMMEDIATELY OVER THE HORIZON, UNLIKE THE CURRENT DETECTOR ARRAY WHICH DETECTED EVENTS RIGHT UP TO THE HORIZON.**

**BECAUSE OF AEROJET'S DESIRE NOT TO OPEN UP DSP FOR COMPETITIVE BIDS, WE MARKETED AN "EVOLUTIONARY" DESIGN IN LIEU OF A "REVOLUTIONARY" DESIGN; HENCE THE TERM "SENSOR EVOLUTIONARY DEVELOPMENT" OR "SED" AS IT WAS KNOWN INTERNALLY. I MUST NOT HAVE DONE TOO GOOD A JOB DESCRIBING THE "NEW" ARRAY, WHICH WAS CONTIGUOUS TO THE BASIC ARRAY BUT CONTAINED FAR FEWER DETECTORS, HAVING DIFFERENT SENSITIVITIES AND A SLIGHTLY DIFFERENT "FREQUENCY."**

**HOWEVER, LET ME ASSURE THE READERS THAT THE ATH (ABOVE-THE-HORIZON) ARRAY DID LOOK DOWN--NOT UP, NOT SIDEWAYS, NOT ASKEW, AND NOT CROSS-EYED, NOT SLOE-EYED BUT DOWN. FROM GEOSYNCHRONOUS ORBIT, THE DIFFERENCE IN LOOK ANGLE BETWEEN THE "HORIZON-EVENT" DETECTORS AND THE ATH DETECTORS IS MOOT—THEY'RE VIRTUALLY IDENTICAL.**

**ONE OTHER DIFFERENCE IS THEIR "CENTER FREQUENCY." BRIEFLY, THE DETECTOR ARRAY STARTS WITH THE SLOWEST FREQUENCY DETECTORS AT ONE END OF THE ARRAY; THE "PIVOT POINT" IF YOU WILL, ABOUT WHICH THE ENTIRE ARRAY REVOLVES. (WE HAVE A REVOLVING ARRAY, NOT A STARING ARRAY). WHY A SLOW FREQUENCY IMAGINE A GROUP OF SOLDIERS, MARCHING IN A WHEEL. THE CENTER-MOST SOLDIER WOULD HARDLY MOVE AT ALL, WHEREAS**

**THE OUTER-MOST SOLDIER WOULD BE AT A NEAR RUN, WITH THE INTERMEDIATE SOLDIERS INCREASING THEIR SPEED FROM "HUB TO RIM."**

**NOW EXTRAPOLATE THAT TO THE DETECTOR ARRAY. THE INNERMOST (NADIR) DETECTORS "MARCH" VERY SLOWLY, WHEREAS THE OUTERMOST ARE "MARCHING" MUCH FASTER. WHEN WE ADDED ANOTHER ROW ABOVE THOSE DESIGNED TO DETECT HORIZON EVENTS (HENCE THE TERM, "ABOVE THE HORIZON") WE HAD TO INCREASE THEIR FREQUENCY EVEN MORE.**

**THE MISTAKE KCLASS MAKES IS TO CHARACTERIZE THEM AS LOOKING "OUT INTO SPACE." IN FACT, THEY POINT VIRTUALLY STRAIGHT DOWN AS DO ALL THE OTHER DETECTORS ON THE ARRAY.]**

DSP satellites originally were developed to detect the launch of long-range ballistic missiles (ICBMs). More recently their mission has expanded to detect the launch of shorter-range SCUD-type missiles, such as those launched by Iraq against Israel during the Desert Storm conflict.

**[WHEREAS IT IS TRUE THE PRIMARY USAF DESIGN REQUIREMENT WAS THE DETECTION OF ICBM LAUNCHES, USAF TEAM MEMBERS AND AEROJET DESIGNERS WORKED DILIGENTLY FROM THE EARLIEST PRELIMINARY DESIGN STAGES TO ENSURE THE DETECTOR DESIGN WOULD BE AS SENSITIVE AS POSSIBLE. AS IT TURNS OUT, WE (FORTUNATELY FOR THE GROUND POUNDERS) MADE THEM SUFFICIENTLY SENSITIVE TO DETECT MANY TARGETS OF SIGNIFICANTLY LOWER INTENSITY. THE FACT THAT WE DETECTED EVERY LOW-INTENSITY SCUD LAUNCH DURING THE GULF WAR IS TESTIMONY TO THAT REMARKABLE EFFORT ALMOST A QUARTER CENTURY AGO.]**

The portion of the infrared spectrum in which rocket engines emit their most intense infrared [SIC] radiation depends on the type of fuel used. Liquid-fueled missiles radiate their most intense infrared energy at wavelengths of about 2.4 to 2.8 microns. In this band, the IR radiation from surface and near-surface objects is heavily attenuated by the earth's atmosphere--with attenuation decreasing with target's altitude.

**[ KCLASS IS PARTIALLY CORRECT, BUT FOR THE WRONG REASON. ASK YOURSELF, WHY WOULD WE RESTRICT DESIGN TO LIQUID-FUELED MISSILES? ALL THE ADVERSARY WOULD NEED IS TO EQUIP THEIR FLEET WITH SOLIDS AND WE WOULD BE "BLIND." NO, KCLASS, WE PICKED THAT PORTION OF THE BANDWIDTH BECAUSE OF THE INCREASED ATMOSPHERIC TRANSMISSION OF IR--NOT THE LEAST! KCLASS IS CORRECT IN HIS STATEMENT ABOUT ATTENUATION DECREASING WITH TARGET'S ALTITUDE. THE MORE ALTITUDE THE TARGET GAINS, THE LESS ATMOSPHERIC ATTENUATION. JUST AS ONE CAN LOOK AT THE SETTING SUN AND NOT BE BLINDED BECAUSE OF THE INCREASED ATMOSPHERIC DENSITY, ANY TARGET SIGNATURE IS ATTENUATED BY ATMOSPHERE. HOWEVER, AS I STATED EARLIER, THE SENSITIVITY BANDWIDTH WAS CHOSEN BECAUSE IT WAS MORE TRANSPARENT TO IR THAN OTHER PORTIONS OF THE SPECTRUM--JUST THE OPPOSITE OF KCLASS' CLAIM.]**

In the early days of DSP--before the availability of high-speed computers on a microchip--atmospheric attenuation was considered a benefit because it helped filter out spurious/false targets, [SIC] such as oil well fires and low-flying jet aircraft. In the quarter-century since DSP was developed, there have been major advances not only in microchip computers but also in infrared sensors. These have been incorporated into DSP to enable it to better detect targets of interest and discriminate them from spurious objects, such as meteor-fireballs and space debris.

**[AEROJET DESIGNERS STROVE--FROM THE ONSET--TO MAKE THE DSP DETECTOR ARRAY AS SENSITIVE AS POSSIBLE. TARGET CHARACTERISTIC/IDENTIFICATION WAS/AND IS, A TASK RESERVED TO THE SOFTWARE (I ALSO WROTE THOSE SPECIFICATIONS). FROM THE OUTSET WE USED IBM 360/75 MAINFRAME COMPUTERS, LATER SWITCHING TO IBM 3033N8 PROCESSORS. HOWEVER THE SOFTWARE EVOLVED TO FACILITATE TARGET CHARACTERIZATION. THE ONLY "ON BOARD" PROCESSING IS TO INCREASE THE SPEED OF THE SEVERELY LIMITED DOWNLINK--NOT TO FILTER OUT OR DISCRIMINATE TARGETS--AGAIN, THESE FEATURES ARE STILL THE DOMAIN OF THE GROUND-BASED SOFTWARE. THE ON-BOARD DETECTORS ARE VIRTUALLY UNCHANGED--IF ANYTHING, THE "NEW" MERCURY-CADMIUM-TELLURIDE DETECTORS ARE EVEN MORE SENSITIVE, AND AGAIN, HAVE NO "ON-BOARD" PROCESSING CAPABILITY.]**

In Regehr's recent comments in Filer's Files, he challenged my statement that if DSP's infrared sensors are to be able to detect ET craft, that their propulsion systems would need to operate at "high temperatures." But in

Regehr's own 1998 report, titled "How To Build a \$125 Million UFO Detector," he wrote: "Infrared detectors should be quite capable of detecting UFOs, as long as either the UFO's hull temperature or [engine] exhaust is hot enough." (Emphasis added.)

**[GEEZ, I WISH I HAD A WAY TO "EMPHASIS ADD." THERE IS A SIGNIFICANT DIFFERENCE BETWEEN "HOT ENOUGH" AND "HIGH TEMPERATURES" AS I AM CERTAIN KLASS REALIZES. THE FIRST, HOT ENOUGH, IS A RELATIVE TERM, DEPENDING UPON MANY VARIABLES. IN MY BOOK, I OFFER MATHEMATICAL PROOF THE DSP WAS CAPABLE OF DETECTING THE IRANIAN UFO. IN OTHER WORDS, IT WAS "HOT ENOUGH" TO BE DETECTED. DID ITS PROPULSION SYSTEM OPERATE AT "HIGH TEMPERATURES" AS KLASS' SCENARIO DEMANDS? WHO KNOWS. I DO KNOW IT WAS "HOT ENOUGH" BECAUSE WE DETECTED IT. IF KLASS KNOWS SOMETHING ABOUT THE ET CRAFT'S PROPULSION SYSTEM....]**

In this same Regehr report, he claimed that the National Security Agency (NSA) "is certainly involved in the study of UFOs.... For two reasons: military security and abductions. Hence I [Regehr] believe that the NSA was created for the express purpose of monitoring UFO activity and of citizens who may have been involved (either directly or indirectly) in the phenomenon." (Emphasis added.) Regehr's claim is sharply challenged by Tom Deuley, long-time UFOlogist and MUFON's treasurer. Deuley spent several years working at NSA. In his paper presented at MUFON's conference in Washington D.C. in 1987, Deuley said that although he had reported his UFO interests and activities to NSA officials when employed there, he had never seen any indication of NSA's interest in UFOs.

**[EVER HEAR OF "COMPARTMENTALIZATION"? I'LL WAGER DEULEY WOULD NOT CLAIM HE WAS PRIVY TO ALL NSA ACTIVITIES.]  
RON REGEHR**

This is in response to Ron Regehr's criticism of the item in the July issue of my Skeptics UFO Newsletter (SUN #58) about the Defense Support Satellite (DSP). Because Regehr formerly was employed by Aerojet's ElectroSystems div. which produces the sensor subsystem for our DSP satellites, his knowledge of its latest design should be superior to mine. Regehr challenges the accuracy of SUN's statement that "most of DSP's infrared sensors look down from its 22,000 mile high altitude." (Emphasis added.) Regehr states that "all of the DSP infrared sensors look down..." (Emphasis added.) My information came from a report prepared by

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Phil Klass

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