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SPHERIX VIKING SCIENTIST WHO FIRST CLAIMED LIFE ON MARS WELCOMES DELUGE OF SUPPORT

FOR IMMEDIATE RELEASE:

BELTSVILLE, MD. Spherix Incorporated (NASDAQ/SPEX) – One of the persons most relishing the news out of last week's ESA Mars Conference in the Netherlands that 75 percent of the attending scientists now believe that Mars may have had life, and 25 percent saying that Mars may currently have life, is Dr. Gilbert V. Levin. Now working as Executive Officer for Science of Spherix Incorporated, the firm he founded in 1967, Levin was Experimenter on the Labeled Release (LR) life detection experiment aboard NASA's 1976 Viking Mission seeking life on Mars.

Levin's LR experiment got strong positive responses indicating living microorganisms at both Viking landing sites. At the time, Levin and his Co-Experimenter, Dr. Patricia A. Straat, were limited by caution and NASA's restraint to stating only that "The data are consistent with the presence of life." However, based on continuing experiments and studies, Levin claimed in a 1997 article that the experiment had, indeed, detected living microorganisms in the soil of Mars. Since making that claim, Levin has been called a "lone voice in the wilderness." A decade after Viking, a leading biologist published a book on the search for life on Mars in which he wrote, "Viking found no life on Mars, and, just as important, it found why there can be no life."

But fast forward to February 2005, and the tide of scientific opinion has suddenly turned. Levin calls the surprising consensus reached in the Netherlands a "watershed event, not only because it marks the beginning of the major paradigm shift acknowledging that life exists beyond Earth, but also because water has literally been key in this controversy."

"It's been a long time coming for the Viking LR results," Levin said, "but paradigm-breaking discoveries are always slow to be accepted. After all, we're dealing with a question here that NASA has called perhaps the most significant in the history of science. Still, it's nice to have company after all these years. I welcome the majority that now accepts the possibility of past life on Mars, and the growing number of those who think that a good case can be made that there are living organisms on Mars today."

Levin points to several recent events that have prompted this long-overdue sea change:

1. The multiple confirmations of methane in the atmosphere of Mars by Dr. Michael Mumma of Goddard Space Flight Center and Dr. Vladimir Krasnopolsky of the Catholic University of America, who produced confirming evidence for their years' earlier finding, and by Dr. Vittorio Formisano, Experimenter on ESA's Mars Express.
2. A statement by Dr. Krasnopolsky that the detection of methane is most likely an indicator of life.
3. The statement by Dr. Formisano that the amount and persistence of methane strongly implies life as its source.
4. Dr. Formisano's additional finding of formaldehyde in the Martian atmosphere, in amounts and persistence he again says is strongly indicative of life.
5. The report by ESA of large bodies of dust-covered water close to the Martian surface (near Viking Lander 1).
6. The finding by Dr. Richard Hoover, of NASA's Marshall Space Flight Center, of living bacteria in Alaskan permafrost that had remained frozen for more than 30,000 years, apparently without liquid water. This supports earlier findings reported by the National Science Foundation of living microorganisms on the Polar Ice Cap where temperatures never rise above freezing. However, Levin says, despite the intense cold, thin films of liquid water exist between mineral crystals and are sufficient to support life in these cases, as, he contends, they do on Mars.

Moreover, Levin and his son, Ron, a Ph.D. physicist, have published theoretical proof and referenced actual experiments showing that the surface of Mars must contain liquid water, perhaps in small amounts, but enough to sustain microbial life. Until recently, this was a hotly debated issue in itself.

Based on the use of radioactive carbon, the LR method is extremely sensitive and fast. It is now commonly used in hospitals to detect blood infections. The Mars LR experiment added a squirt of a solution of seven radioactive carbon nutrients to a sample of soil. If any microorganisms were present and consumed any of the nutrients, radioactive gas would evolve from the soil. To confirm that evidence, another sample of the soil would be heated to a temperature calculated to kill any microorganisms, but not high enough to destroy chemicals capable of producing the result. This sample would then be tested. If it gave no response, this would confirm that the microorganisms had caused the initial response, and the criteria for life would have been satisfied. The experiment had never failed in its extensive testing on Earth.

On Mars, the LR found strong positive responses at both landing sites, and heated samples gave no response. Additional LR experiments on Mars modified to distinguish more definitively between biology and chemistry further indicated biology. A total of nine experiments was conducted. All results were consistent with biological activity. Nonetheless, the failure of other Viking experiments to support this conclusion led to a consensus of rejection.

Methane producers were among the many hundreds of microorganism species tested in the LR during its 10-year development period. Because some methane producers require formate, it was included in the LR nutrient. Thus, the Mars LR results are consistent with the findings of methane and formaldehyde, the possible source of formate to support methane-generating microorganisms on Mars. Levin, however, thinks that the principal gas evolved in his experiment was carbon dioxide.

Levin has created a website www.GilLevin.com where he displays all his published papers on Mars. It has attracted growing attention, last year having had 640,000 hits. With the new findings, the site has had more than 460,000 hits since January 2005. He believes this strong showing is because many people are beginning to take his data seriously. He continues to ask NASA for an independent review of the Viking LR data and his conclusion, but none has been forthcoming. Levin points out that, in the 29 years since Viking, of the scores of attempts by scientists to duplicate his Mars results without living organisms, none has succeeded. Nor has any theoretical explanation held credence. Principal among these were the failure of a Viking instrument to find organic matter, an attempt to interpret the LR data as evidence for a layer of life-destroying peroxide, and the presumed lack of liquid water. Levin's papers have rebutted these and all other attempts to explain away his findings.

To Levin, the most inexplicable aspect of his 30-year astrobiological journey has been that NASA hasn't sent another life detection experiment to Mars, although the agency has maintained that the search for life on Mars is still its highest priority. He says that, even if living organisms did not cause his Viking results, the startling finding that the soil was so active demanded a return of his experiment, modified, as he has proposed, to determine the nature of the agent responsible.

Happily welcoming the shift in the scientific community's opinion on life on Mars, Levin points out that "Science is not a democratic process. The truth lies in hard analysis of data, and I think the space science community should take a long-overdue look at the Viking LR results. It is also time to send my chiral LR experiment to Mars."

This experiment would have a dual purpose, 1) to remove any doubt that the LR really had detected life, and 2) to determine whether Mars life is related to Earth life. To do the experiment, a miniature instrument based on the LR legacy would be placed on a Mars lander. The sterilized instrument would separately moisten the soil with isomers of the chiral compounds (compounds that have mirror images, termed "left-handed" and "right-handed") that were mixed together in the original LR nutrient. All life on Earth prefers only one mirror image of such compounds. Chemicals react equally to both mirror images. Thus, if the Martian soil produced more gas from one chiral form than from its mirror image, this would be a certain sign of life that "no scientist would dispute," Levin says. However, he adds, "The most exciting prospect would be if the Martian chiral preference were opposite to that shown by Earth life. This would mean the two life forms were of different origin. Conversely, if the chiral preferences are the same, this would be evidence that both life forms were related." Although NASA has yet to accept any of Levin's several proposals to perform the experiment, he is hopeful that the rapidly changing climate in the scientific community will persuade the space agency to take a fresh look at this approach and conduct the experiments as soon as possible.

Dr. Straat, who now shares Levin's conclusion, was a Spherix employee during development and execution of the mission. Assisting Levin, she led the laboratory work and spent four and one-half years in California helping the instrument engineers turn the LR concept into spaceflight hardware that operated flawlessly on Mars. After three years of post-flight investigations that failed to find a non-biological explanation of the Mars results, she became an NIH official. Now retired, she resides in Sykesville, Maryland.

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