

Frontier Analysis, Ltd

TECHNICAL SERVICE RESPONSE NO.: UT017

Subject: Analysis of a White Fibrous Material Observed Falling from the Sky in Shenandoah, Iowa (October 4, 1981)

Date: September 1, 2001
(Revised April 23, 2009)

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Background/Objective: On Sunday, October 4, 1981 between 12:30 - 6:00 p.m., globs of white, fibrous material were observed floating from high in the sky. There were copious amounts, and it was floating in giant spirals. It stuck to trees, bushes and telephone wires, i.e. everywhere in town and the surrounding country. This is typical of many other similar events in the past and present and the phenomenon has been designated by many as "angel hair falls".

An intriguing coincidence about this "angel hair" sample is that at 12:30 p.m. a UFO was sighted just prior to the fall. UFOs have been observed in past angel hair falls, though not always. Yet the statistics involving UFO observation followed by angel hair drops are high enough to imply a connection. The UFO was observed in this event had the appearance of a silver dollar. It was in view for approximately one minute and was about 60° above the horizon. It appeared to stand still, then suddenly sped up and disappeared. It was a bright day with a clear sky.

The object is to identify this material in order to elucidate its source.

Conclusions:

- 1) The white fibrous material is identified as a polymer containing protein amide type linkages, i.e. protein. Therefore, it is speculated that a biological source is involved in its manufacture. However, at this point the

specific source remains unidentified. The spectra data are close to that of silk made by caterpillars and spiders.

- 2) This material compares to that from “angel hair” falls in Los Gatos, California (October 19-20, 1977); Sacramento, California (November 11, 1999), and Burlington, West Virginia (September 19, 2000) which were also analyzed by this laboratory.
- 3) It should be noted that the suggestion the material is from a biological origin does not rule out a possible “intelligent” influence. The “jury is still out” on the specific source of this material until further research is completed.

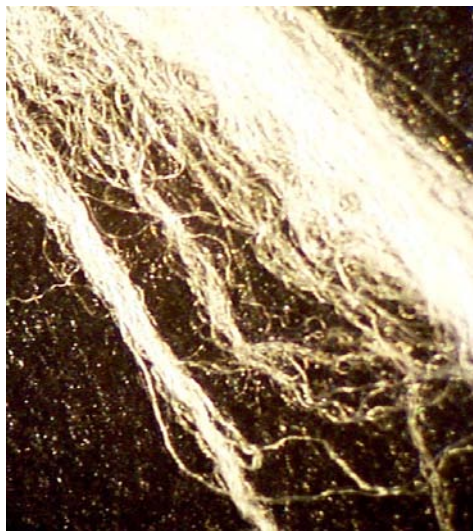
Procedure: The sample was submitted with the following information”

Sample: A white fibrous material collected in Shenandoah, Iowa 10-4-81.

An infrared spectrum was obtained of the sample using the Harrick SplitPea® cell on the Nicolet Avatar 360 spectrometer. Microscope photographs were obtained using the Leika GZ6 stereomicroscope interfaced to a Kodak Digital Science MDS 120 camera.

Results:

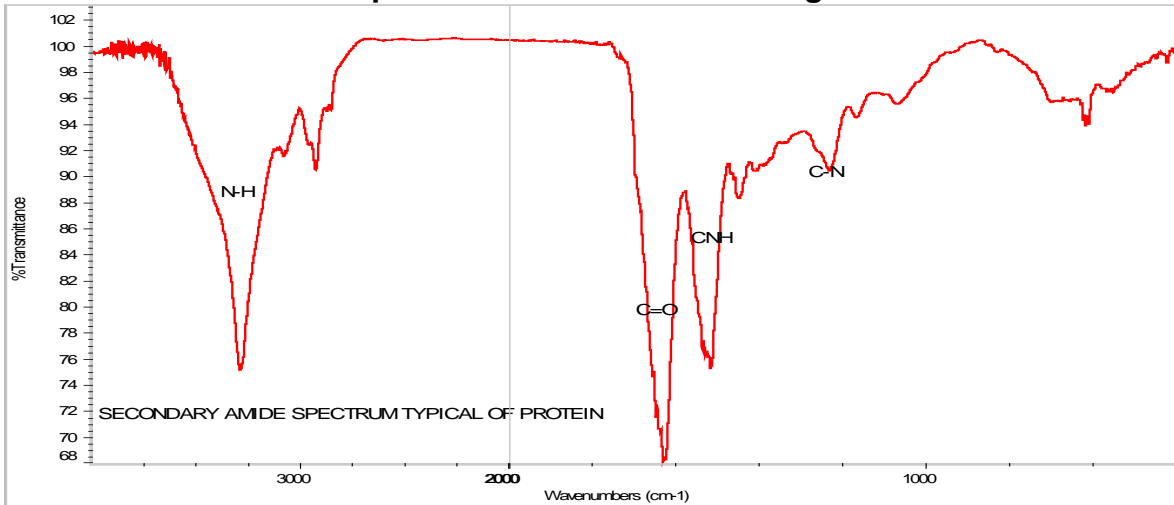
A microscope photograph of the fibrous material shows it is made up of extremely fine strands¹. There are very tiny droplets on the fibers that are similar to the droplets observed on silk derived from spiders and caterpillars. It was taken at 60x magnification.



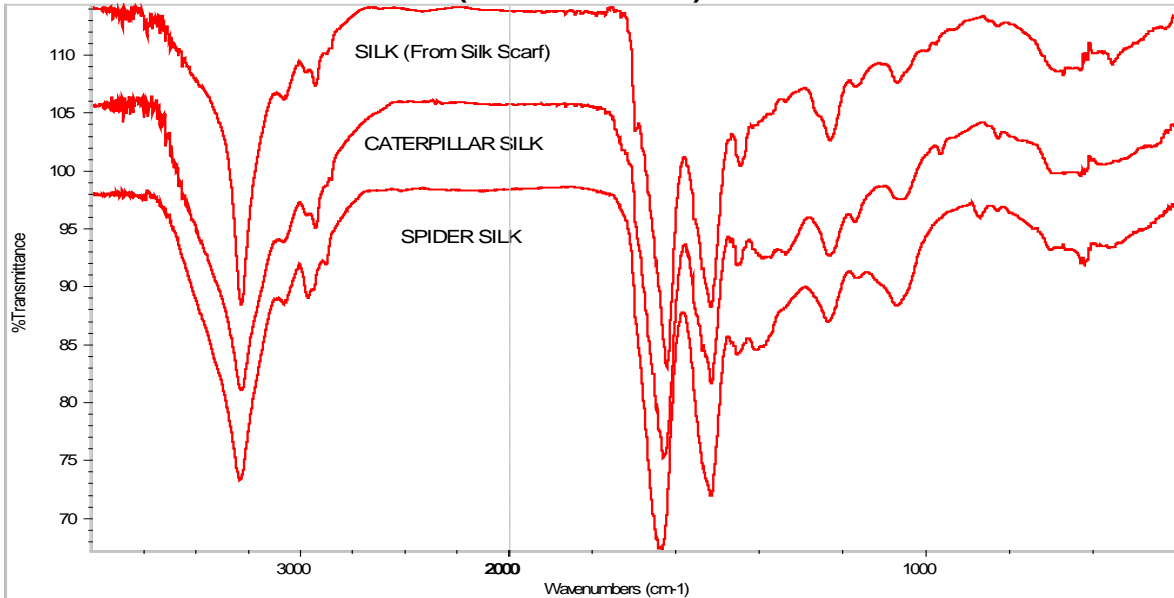
¹ SEM microscope analysis of “angel hair” fibers from the Los Gatos, California fall show fibers were <1 micron (0.017 – 0.27µ). (T.S.R. No.: 002)

Infrared analysis shows prominent absorption bands due to N-H ($3700 - 3000 \text{ cm}^{-1}$) and secondary amide CO ($1650 - 1600 \text{ cm}^{-1}$) and CNH ($1580 - 1470 \text{ cm}^{-1}$), as well as other weak to moderate bands identify the strands as a protein material. The spectra are most similar to silk from caterpillars and spiders. The spectra of the fibrous material from this fall are also similar to other "angel hair" drops. Following are all of the above mentioned spectral data.

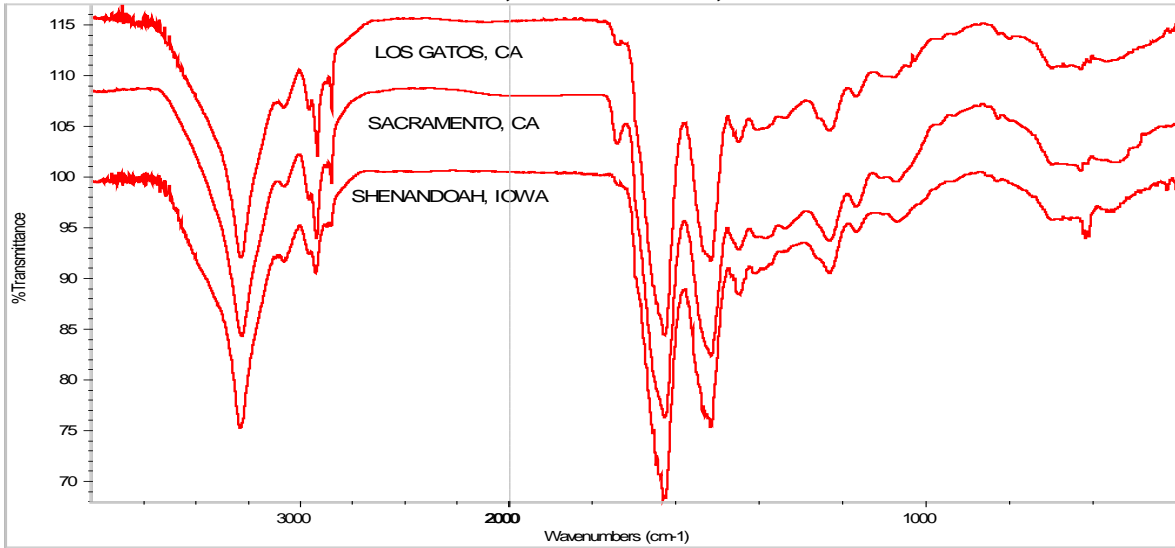
Infrared Spectrum of Shenandoah "Angel Hair"



Reference Infrared Spectra of Spider Silk, Tent Caterpillar Silk, and Silk (from Silk Scarf)



Infrared Spectra of "Angel Hair" from: Sacramento, California; Los Gatos, California; Shenandoah, Iowa



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