



DEPARTMENT OF THE AIR FORCE

30TH SPACE WING (AFSPACECOM)

26 January 1995

30th Space Wing
History Office
747 Nebraska Ave
Vandenberg AFB, CA 93437-6264

Chaplain George B. Greene
Calvary Christian Awareness Fellowship

Dear Chaplain Greene:

Thank you for your letter of 19 January 1996 requesting information about the photographs of the "so-called mystery" cloud that were published in *Life* magazine dated 17 May 1963.

Based on the information that you sent me and a cross-check of the missile launch records at Vandenberg Air Force Base, Dr. James McDonald, Institute of Atmospheric Physics, University of Arizona, is absolutely correct; the cloud that appeared over Flagstaff, Arizona, on 28 February 1963 was caused by the release of unburned missile propellant particles and water deposited into the less dense upper atmosphere by a missile launched from Vandenberg. When a residual cloud is formed it is known as the "Twilight Phenomenon." Although the phenomenon is most often visible at night, the cloud of frozen water and propellant can occasionally be seen after a daytime launch.

On 28 February 1963, the Air Force launched two missiles from Vandenberg. The first missile was an Atlas D, nick named "Pitch Pine." Launched at 0102 local time, the vehicle was aimed toward the South Pacific where it was targeted by an Army Nike-Zeus missile. The second missile was a Thrust Augmented Thor (TAT) space booster, fired at 1348. Because of an engine malfunction, Range Safety Officers destroyed the vehicle two minutes after liftoff. It is difficult to say with absolute certainty which of the two missiles was responsible for creating the "mystery" cloud that reportedly drifted over Arizona, a few hours after the launch. In any event, the sighting reported in *Life* was the result of a military operation, not divine intervention.

Enclosed are declassified post flight summary mission reports, confirming the two missile launches on 28 February 1963, and pictures of both vehicles. I am also

enclosing an Air Force "Fact Sheet" and a 1 September 1995 copy of the *Space & Missile Times* that explain in detail the Twilight Phenomenon.

I hope this information is useful and wish you all the best of luck.

Thank you for your interest in the Air Force.

Sincerely,

Jeff G [REDACTED]

JEFFREY G [REDACTED]
Chief, Office of History

PS: Your offer to add my name to your mailing list is appreciated, but not necessary. I'm happy to be of assistance to you.

Enclosures