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DAILY ENTERPRISE



(U) HISTORY TODAY - FRIDAY CLASSIC: March 18, 2016

FROM: CCH

Run Date(s): 03/18/2016

(U) A lunar look back

(U) Every Friday, the Center for Cryptologic History republishes a favorite *History Today* from our 13-year archives. We invite our readers to send us suggestions for favorite articles they would like to see reprised.

(U) Many of us are impressed by the photos from space we have recently seen on the Internet, taken by U.S. astronaut Scott Kelly, who returned to earth on March 2, 2016. These pictures reminded us of a *History Today* article about an earlier photo from space. The year was 1966.

(U) HISTORY TODAY – April 2, 2010



(U) As the Cold War rivalry spread into space, the U.S. and USSR studied the feasibility of exploiting the moon.

(U) In the 1960s, the moon's surface was a mystery: some scientists believed the moon was covered with hundreds of meters of dust incapable of sustaining the weight of a spacecraft. As a result, both the U.S. and USSR sent many probes to the moon.

(U) The USSR crash-landed the first lunar probe in 1959, followed by five "hard" landings by the U.S. between April 1962 and March 1965. Then the USSR crashed three probes in rapid succession between May and December 1965. This spate of activity raised eyebrows, but the real surprise came two months later.

(U) On February 3, 1966, the USSR shocked the world with the first soft lunar landing and by transmitting signals from a craft named Luna 9. Some scientists said this put the Soviets ahead in the "space race."

(U) In those days, with the USSR behind an iron curtain of secrecy, many, including reputable scientists, believed this was a precursor to military use of the moon. Against this backdrop, U.S. President Lyndon B. Johnson pushed the U.S. intelligence community to give him "ground truth" on what the Soviets had achieved with Luna 9.

(U) The initial Luna 9 transmissions, facsimile pictures, were obtained by U.S. intercept sites and by the British at the Jodrell Bank radio telescope near Manchester. Scientists at Jodrell Bank processed some pictures and released them publicly on February 4. The Soviets were angry because they had not yet released any and because the Jodrell Bank pictures were distorted.

(U) On the morning of February 4, before the Soviets released any photographs, Dr. John O'Hara, an electrical engineer in the Telemetry Systems Division at NSA, was training with several colleagues on new equipment in an analytic laboratory. One of the others, engineer James Cover, invited O'Hara to attend a meeting on "how to process the Luna 9 transmissions."



(U) Lunar picture, (circa 1966)

Doc ID: 6660664

(U) The tenor of the meeting was depressing, O'Hara remembered, since the only recommendations for processing the photographs involved purchasing new, fairly expensive equipment, amid speculation that it would take several weeks to acquire and assemble it. The meeting chair, a navy commander, said something to the effect that "the entire White House and Congress are looking to NSA for answers and we are not producing."

(U) After the meeting O'Hara and Cover decided they could process the pictures with existing equipment in the lab. They found the equipment, diagrammed ways to interconnect it, and, by early afternoon, lashed the system together. The engineers confidently fed the signal from the tape into the system. When they got nothing but garbage, with a group of colleagues watching, they were momentarily crushed and embarrassed. The two tweaked their device with some jury-rigged fixes: this time the system worked and produced excellent pictures of the lunar landscape.

(U) Some of the kibitzers noticed that one picture showed a footpod of the lander, with some Russian words and numbers. Within minutes, many Russian linguists pored over the images. There was disappointment when the linguists decided the markings were just equipment identification and serial number data. It seemed many were expecting some abusive anti-American expression, as O'Hara said he did, from the Soviets.

(U) The pictures were clear, but did not have the proper aspect ratio. This was because the processing equipment could not run slow enough. O'Hara knew that a contractor had three recorders with slower speeds, and contacted a local representative to borrow one of them. The company representative said the only operational one available was in Denver. After some negotiating, it was agreed that NSA would swap an Agency high-speed recorder for the contractor's slow-speed equipment.

(U) Two trips to Friendship Airport (now BWI) effected the swap. The equipment produced perfect pictures. The engineers were later told by Charles Tevis, a senior NSA executive, that the pictures were on the desk of the President before the Soviet release, giving LBJ the "ground truth" he wanted. Tevis also provided top-cover when the EEs were criticized for the informality of their trade with the contractor.

(U) To discuss historical topics with interesting folks, visit the Center for Cryptologic History's blog, [History Rocks](#) ("go history rocks").

(U) Have a question or comment on *History Today*? Contact us at [DL cch](#) or

Information Owner
Page Publisher
Last Modified: March 18, 2016
Last Reviewed: March 18, 2016

~~DERIVED FROM: NSA/CSSM 1-52, DATED: 20180110, DECLASSIFY ON: 20430110~~
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