

Photogrammetric Brief

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Technique for Producing a Pseudo Three-Dimensional Effect with Monoscopic Radar Imagery

THE DECLASSIFICATION of large quantities of monoscopic radar imagery, as well as the continuing production of such imagery, presents the geoscientist with a large amount of raw data in need of analysis. In the absence of stereoscopic coverage, techniques which aid in the differentiation of areas of diverse relief are extremely helpful to the interpreter.

Interpretation of radar imagery in areas of low relief (such as the Gulf coast) has been facilitated by the employment of a technique which imposes a pseudo three-dimensional effect upon the imagery. The technique is simple, relatively inexpensive, and easily

applicable to the present methods employed for monoscopic imagery viewing and interpretation.

Imagery such as shown in Figure 1 (in this case 9 1/2-inch film from AN/APQ-69 radar) is placed on a light table. Next, a reverse image reproduction of the same area is placed beneath the imagery. This reverse image is a contact print developed on ESTAR-base film.†

The three-dimensional effect (Figure 2) is produced by slightly off-setting (0.1–0.2 mm) the ESTAR-base reproduction. With magnification by a binocular microscope the three-dimensional effect becomes even more

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† This article was received and acknowledged in January 1966, but it became misplaced and lost during the editorial procedure. A new copy was recently provided by the authors.—*Editor*.

‡ Unknown to the authors at the time of development of this technique, a somewhat similar method was developed by Mr. Stan Morain of the CRES staff. His method consisted of superimposing two transparent positives which produced a much more subtle three-dimensional effect.

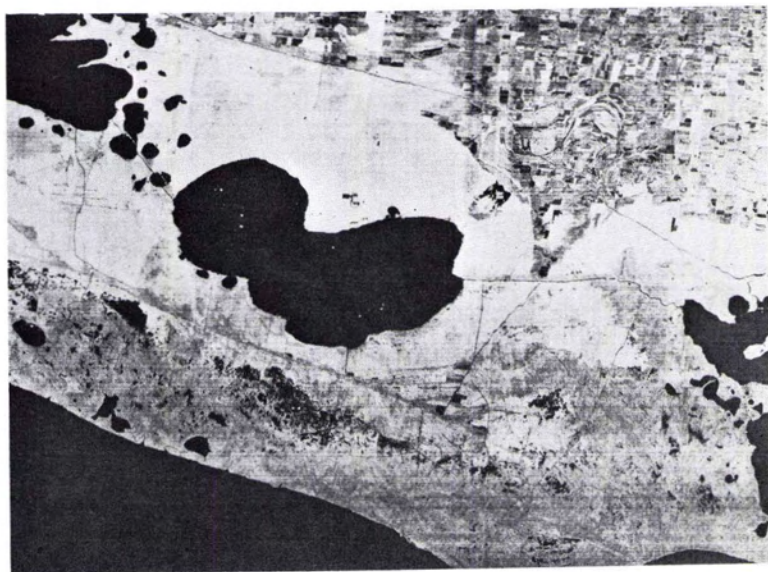


FIG. 1. Print of positive radar imagery, vicinity of White Lake, Louisiana.

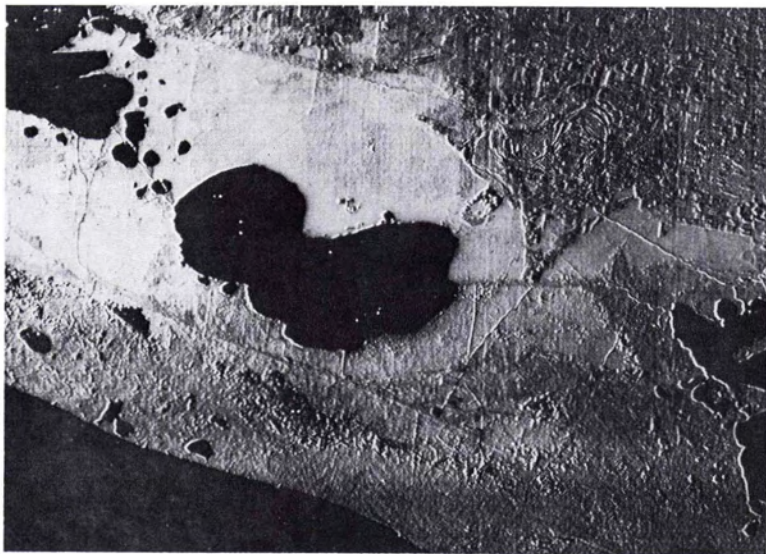


FIG. 2. Pseudo three-dimensional effect produced by superposition (with slight offset) of positive and negative transparencies.

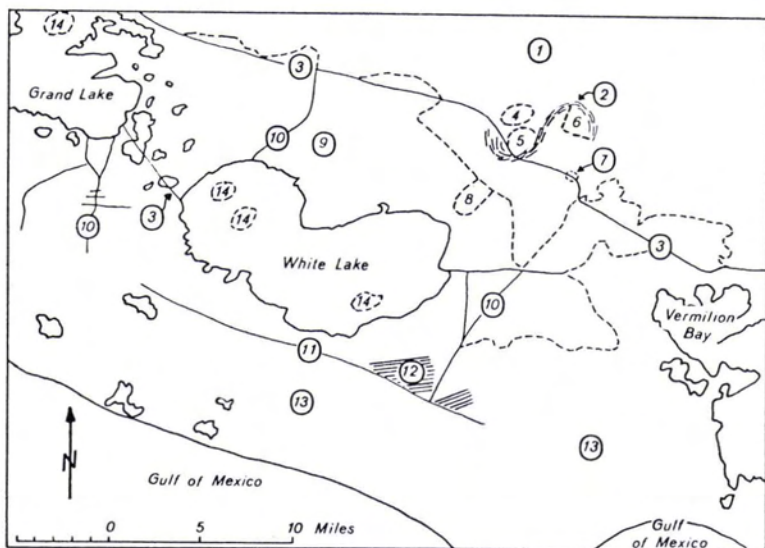


FIG. 3. Land-use map. Key: 1, Cultivated land; 2, Meander scars; 3, Intracoastal waterway; 4, Dog Island; 5, Green Pine Island; 6, Third Island; 7, Town of Forked Island, La.; 8, Gravel pits; 9, Non-cultivated (grassland—Southern Cordgrass Prairie); 10, Canals; 11, Abandoned beach; 12, Beach ridges; 13, Coastal marshland; 14, Oil well platforms.

pronounced, permitting an interpreter readily to identify features or objects that were formerly on the threshold of recognition (Figure 3).

This technique is known only to exaggerate relative topographic relief, its radargrammetric value not having been investigated.