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REFERENCE LINES, FAULT CLASSIFICATION, TRANSFORM SYSTEMS AND OCEAN-FLOOR SPREADING: DISCUSSION

by

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ABSTRACT

Wellman (1971) has presented erroneous data relating to lineaments in Papua New Guinea. The main faults and folds in Papua New Guinea as determined by ground and remote sensing surveys by the Bureau of Mineral Resources, the Geological Survey of Papua New Guinea and by oil exploration companies are shown on the new BMR - GSPNG 1:1,000,000 Scale geological map of Papua New Guinea.

Wellman (1971) in a recent issue of this journal produced an account of fault systems in the Pacific region. However, his Figure 5 and related text (p.205) cannot go unchallenged in so far as they refer to the eastern part of the island of New Guinea, i.e., Papua New Guinea.

An example of the inaccuracy of Figure 5 (Wellman, 1971), is the omission of major faults such as the Owen Stanley Fault (Fig.1) and the Frieda Fault (Fig.2), and the depiction of a non-existent major fault system (which he called the New Guinea Fault).

Exhaustive examinations of airphotos, both vertical and oblique, at scales from 1:20,000 to 1:80,000, and of side-looking airborne radar imagery, by numerous officers of the Bureau of Mineral Resources and the Geological Survey of Papua New Guinea during the last 5 - 10 years have failed to detect the lineations shown by Wellman. Furthermore, these studies, and extensive field mapping by government and oil exploration company geologists over the last 25 years, have revealed the existence of the fault and fold systems shown here in Figures 3a and 4. Although a strike slip type of movement is suspected for some of these faults only vertical movements have been proved. Thus the sinistral movement claimed for the imagined "New Guinea Fault" should not be regarded as typical of the fault system of Papua New Guinea.

The following short bibliography is intended as a guide to facts for future workers who wish to cite the geology of Papua New Guinea.

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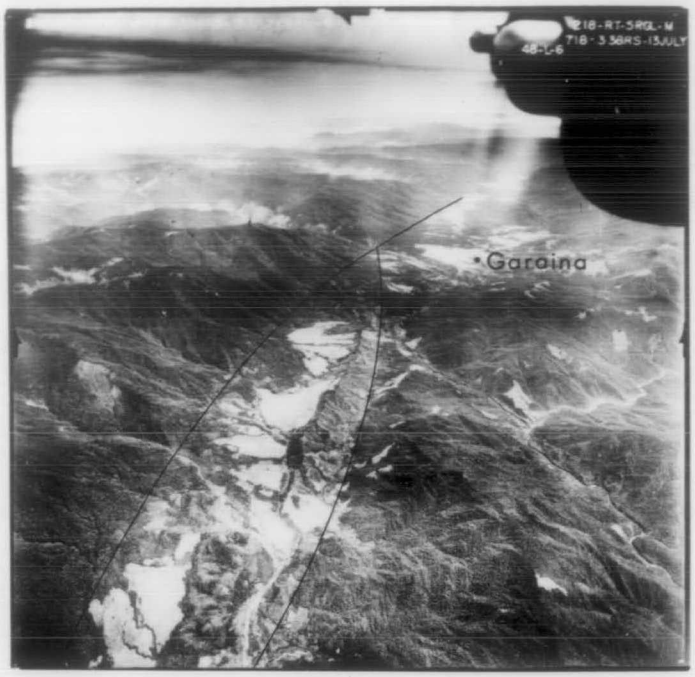


Fig 1 Owen Stanley Fault (oblique airphoto)

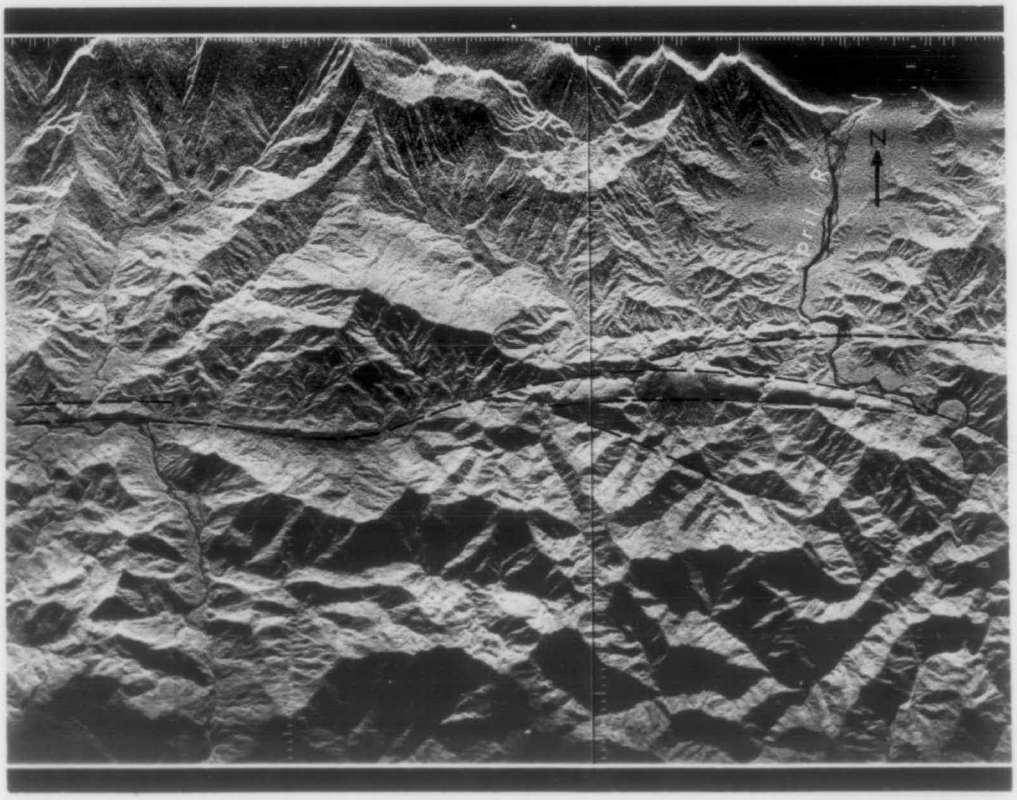
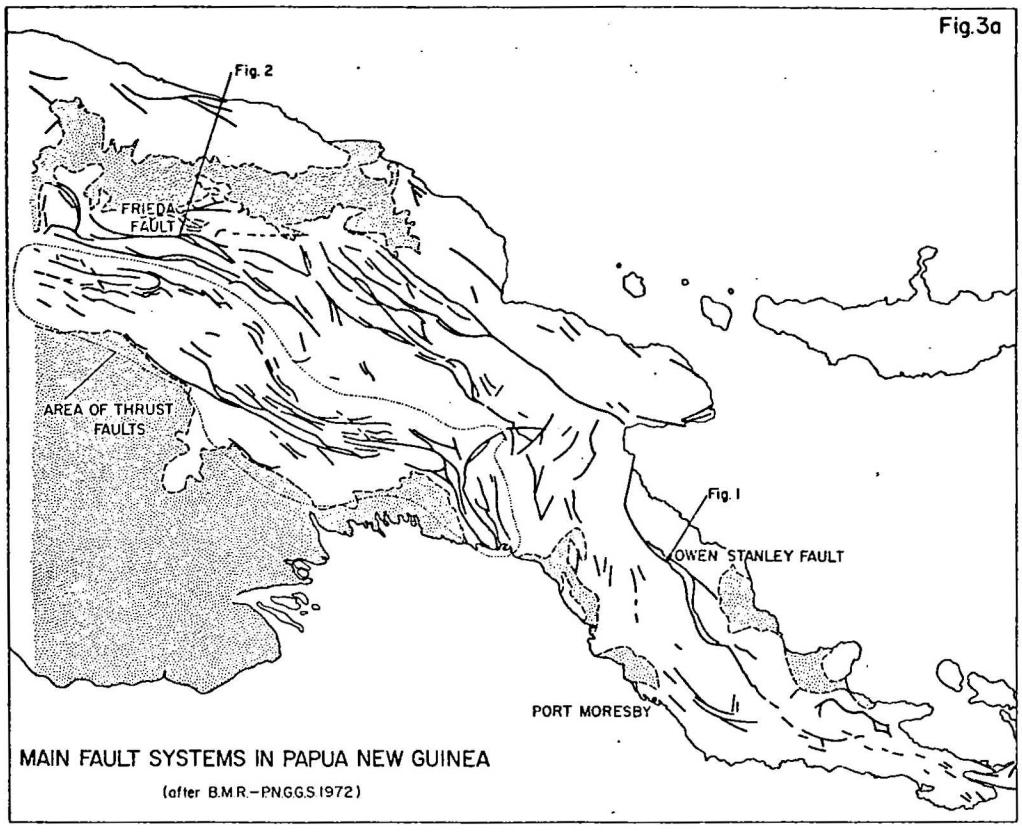


Fig 2 Frieda Fault (side-looking airborne radar imagery)

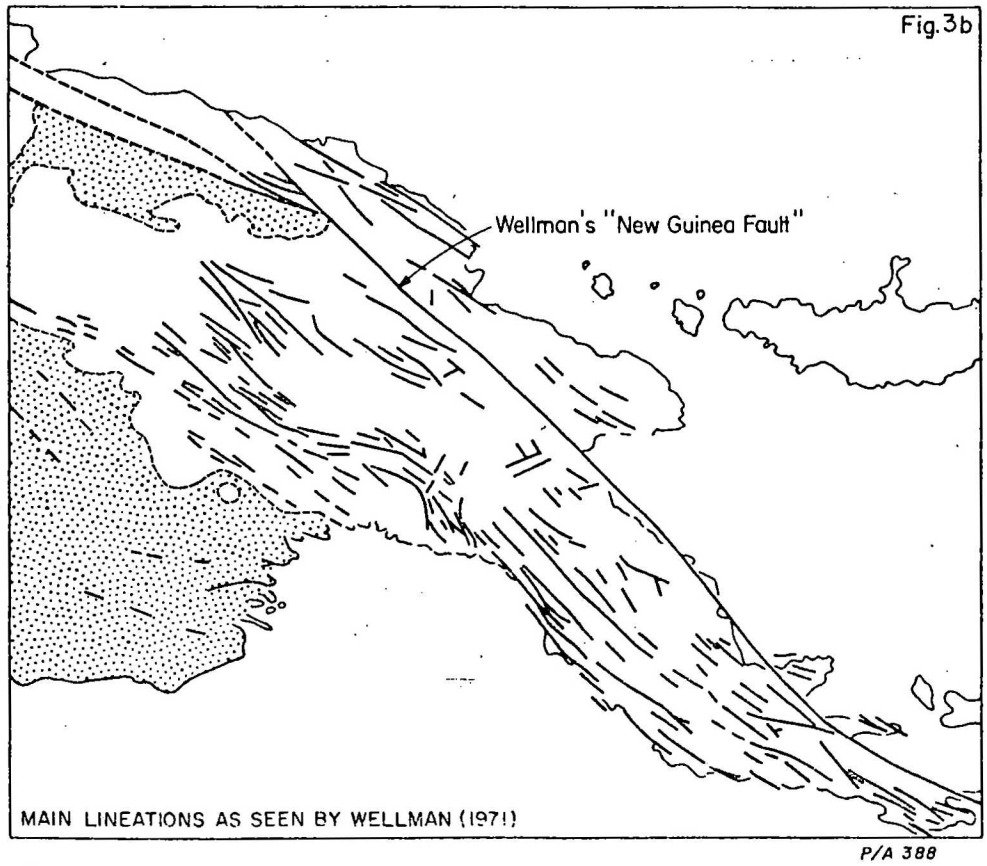
Fig.3a



MAIN FAULT SYSTEMS IN PAPUA NEW GUINEA

(after B.M.R.–PNGGS 1972)

Fig.3b



MAIN LINEATIONS AS SEEN BY WELLMAN (1971)

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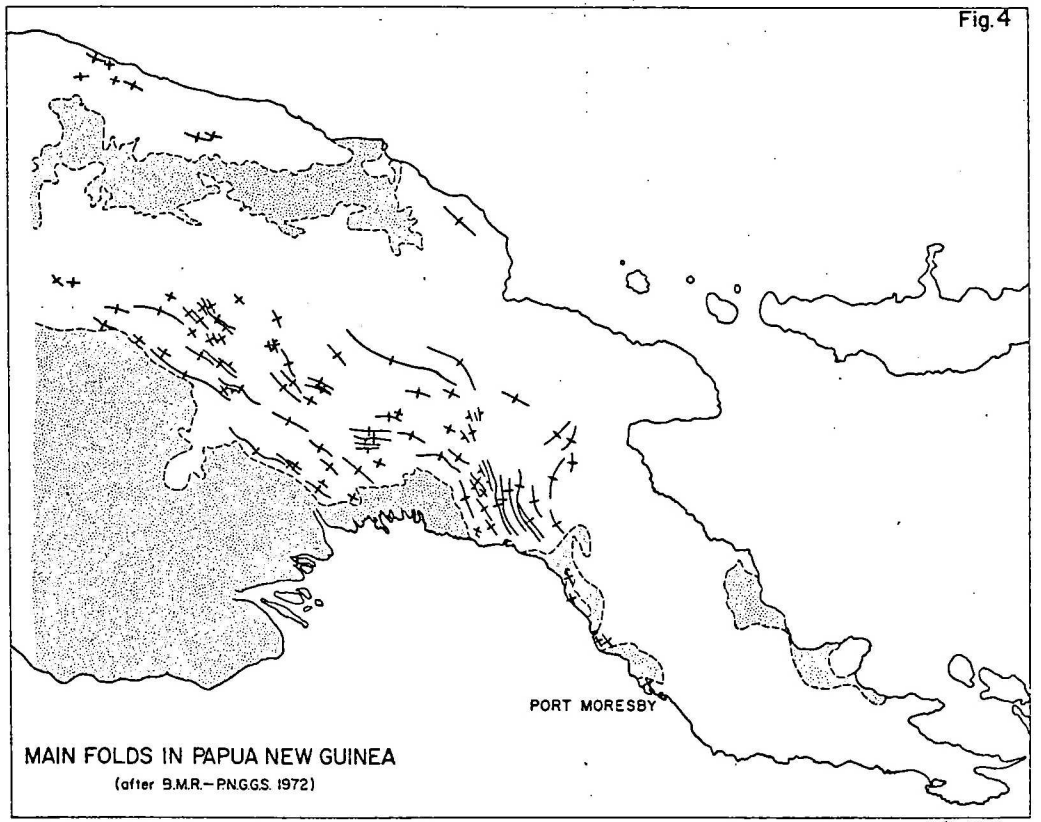
Fig. 4



MAIN FOLDS IN PAPUA NEW GUINEA

(after B.M.R.–P.N.G.G.S. 1972)

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