

not been described on the existing geological map, are noteworthy.

The lineament density in the flood basalts distribution area, especially in the low land around the Paraná River, is far lower than that in the sedimentary rock area. This low land covers the “Central Lift” of Marques et al. (1989) in which horst and graben structure controlled by normal fault of NE-WS direction in the Ordovician to Silurian formations was assumed, and magnetic and gravity anomaly were extracted from airborne magnetic and gravity survey data; however, a lineament corresponding to it has not been extracted on the SAR image. This may indicate that the basement structure does not have a great tectonic influence upon the distribution of the flood basalts and there were no great tectonic movements in the present area since the flood basalts had been erupted.

(2) Circular Structures

In the present area, many circular structures were extracted together with the lineaments. Among these, a circular structure in the Lages area has a clear correspondence to the geological circular structure. In the Lages area, a large-scale alkaline complex body, which intrudes into the Paleozoic formation exists, and this complex has been extracted as a clear circular structure. Also, in the flood basalts distribution area, some circular structures probably corresponding to a meteorite crater were extracted.

2-3-2 Landsat TM Image

The Landsat TM mosaic image composed of 74 scenes, which covers the entire Paraná basin, was purchased from GEOIMAGE Pty Ltd in Australia and was interpreted on a large scale of 1:2,500,000. The ground surface resolution was made as coarse as 200 m in order to compress the data capacity of the image. This resolution is sufficient for such a large-scale interpretation. The mosaic false color image of RGB = 345 was used for interpretation. The output example and interpretation map are shown in Fig. II-2-3-2 and Fig. II-2-3-3, respectively.

The Paraná basin shows very flat topography as a whole, and the lineament density is low. The dike swarm of the Ponta Grossa Arch was extracted as very clear lineaments similar to the case of the JERS-1/SAR image. This dike swarm is so large-scale that each dike can be extracted in the satellite image of 1:2,500,000 scale. The lineament density in the flood basalts distribution area is especially low. However, the Paraná River, which flows through the center of the basin, is very linear, and the lineaments of NNE-SSW direction along the Paraná River were extracted. Therefore, the Paraná River itself possibly represents large-scale fracture zone. As a circular structure, a few alkaline complexes were extracted in the eastern margin of the Paraná basin.

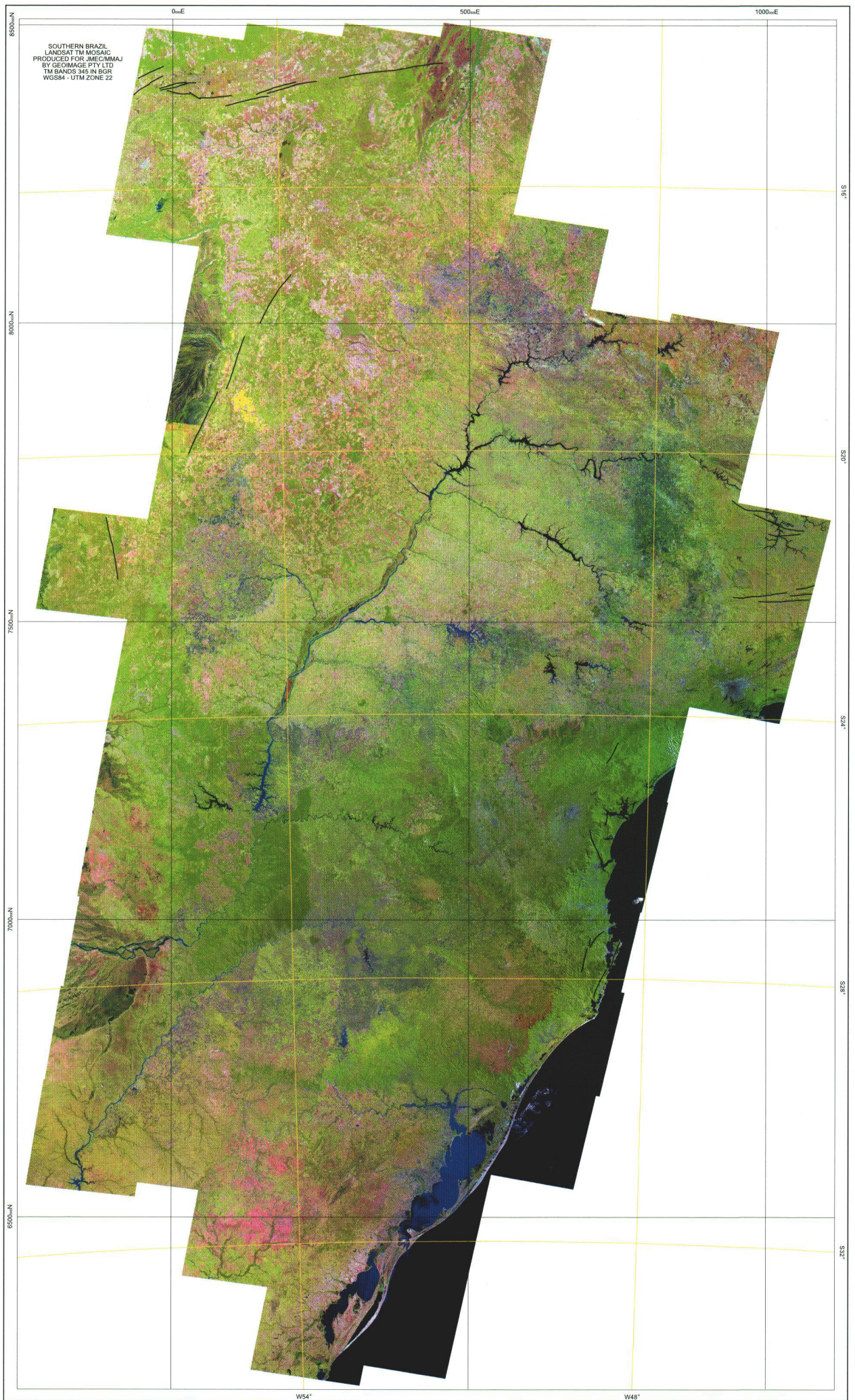


Fig.II-2-3-2 Landsat TM mosaic image

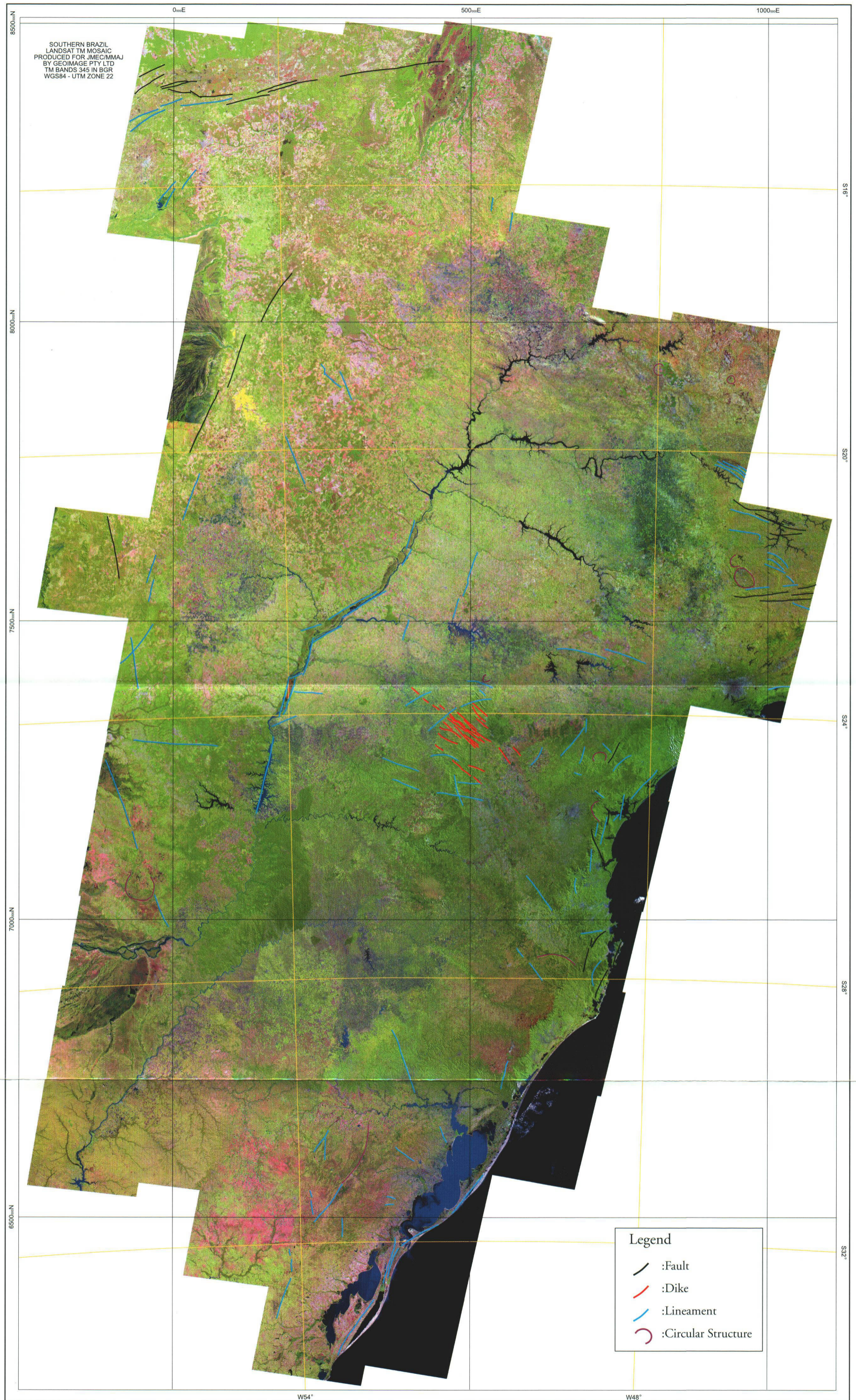


Fig.II-2-3-3 Interpretation map based on Landsat TM mosaic image