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STRUCTURAL GEOLOGY INVESTIGATION ON MASSIF CENTRAL AND PARISIAN BASIN (France)

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Discussion on significant results

The author has identified the following significant results on two MSS images in Massif Central and Parisian basin, France (E. 72 1044 - 10062 and E. 72 1061 - 10013) it is band five which gives the most information concerning the fracturation.

Band 6 and 7 show the fracture emphasized by forest boundaries and by the linear trace of water courses.

Band 5, 6 and 7 are therefore complementary.

The most remarkable lessons we may draw from this preliminary investigation of two ERTS 1 images covering two differents landscapes, a regular relief of shelving plateaux bounded by cuestas having a sedimentary origin and a mountainous region built in cristallin and volcanic rocks, is that deep structural elements under a thick sedimentary cover can be translated on the surface by indirect criteria. MSS imagery has permitted to extend the Metz fault towards west and has showed clearly, through land use on the Rhone valley fluvial deposit the continuation towards East of the carboniferous basin of St Etienne.

M.S.S. images 1061 - 10013

Is on the eastern part of the Massif central. Image quality are the following,

Band 4 : The image is hazy

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Band 5 : give an excellent view of land use repartition

Band 6 : good discrimination of the forests. Cities are well differenciated

Band 7 : Few differences with band 6.

Significants results are obtained, for geological purpose, with band 5 and on :

The Jura mountains and it structural trends

The Rhône valley where small differences are visible into the recent sediments

The Tertiary basin of Roanne, well defined

The Carboniferous basin of St-Etienne and its extention under the fluvial deposit of the Rhône valley. A such extention is known by drilling under 500 meters sediments.

Comparison with existing map shows in some case extention of the present day knowledge and at least a good correlation.

Others images are less interesting.

M.S.S. images 1061 - 10015

M.S.S. images are difficult to interprete because clouds and haze effect are important.

M.S.S. images 1115 - 10024

Clouds are covering the Massif central. The eastern margin of this massif is strongly faulted and the M.S.S. images, mainly on band 6 and 7 show an important fracture running South-West North-East from "La Montagne de Seranne" to Valon (in the North) going through Ales.

M.S.S. images 1061 - 10022

Not suitable for clouds cover is important.