CONSIGLIO NAZIONALE DELLE RICERCHE
LABORATORIO PER LA GEOFISICA DELLA LITOSFERA

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Posta: GEOLAB, Via Mario Bianco, 9
Telefono (02) 2840227 - 2899905

Skylab E R E P - Second Progress Report

1 - Test site area: Sicily

The study of the environment of Mt.Etna will continue in the month of June with the on ground observation performed by a joint group of geologists and vegetation patologists.

The main topic will be the comparison between the forest surrounding the area of the last lateral eruption of February '74 and the one in the northern slope of the volcano, showing, by a first observation on the images,the same drop in the near I.R. reflectance which could be originated by the gases escaping from the shallow underground lavas.

While this research is of maximum interest in order to forecast the volcanic eruptions, it must be considered in the frame of a wider study regarding the so called " spectral indicators ".

The analysis of the vegetative canopy will take into account respectively the anomalous seasonal behaviour of the brush as well as of the pinus and oak trees forming the forest belt around the large volcanic structure. In fact, the velocity of the metabolic change is strongly different for brush and high trees; as far as visible and near I.R. reflectance is concerned.

2 - Other areas

a) Delta Po area.

The pattern recognition on rice fields has been almost completed using both false color I.R. photography (the original Skylab image) and the color-ratio performance of the multispectral bands.

By the ratio method the presence of clorophyll has been enphasized while by means of the false color combination the small spectral characteristic differences were pointed out.

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The comparison between the ratio of bands 42-37 and 41-38 gave the best results

b) Venetian Plain Region.

The patterns of some paleo river beds have been mapped with satisfactory results using the images of S 190 A Multispectral Camera.

For this research we employed an analog TV processing system to examine the information content of the bands ratio.

By applying the integrative function it was possible to follow the continuity of the patterns influenced by the surficial moisture.

FIGURE CAPTIONS

1 - Delta of river Po.
The square corresponds to the investigated area (see slides 2 and 3).

2 - Delta of river Po (color slide): additive synthesis of ratio $\frac{42}{37}$ (red) and ratio $\frac{41}{38}$ (green).
The total surficial clorophyll distribution is shown.
The comparison between the original false color image and this composite gives almost a complete description of the vegetation canopy. The clorophyll content in coastal water is also observed.

3 - Delta of river Po (color slide) : additive synthesis of contiguous bands ratio ($\frac{37}{38} + \frac{42}{41}$). A discrimination inside the vegetation canopy is observed.

4 - Venitian Plain Ragion; encircled is shown the investigated area (north of the city of Padua).

5 - Map showing the hydrogeological knowledge (mainly concerning old riverbeds) in the venitian plain, before the Skylab investigation. Scale : 1:75.000.

6 - A map of the same area (scale 1:250.000) illustrating the old riverbeds and the gravel deposits found by the means of the analog technique of interpretation of Skylab images (masking slicing and ratio additive synthesis).

FIG.1

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FIG. 4

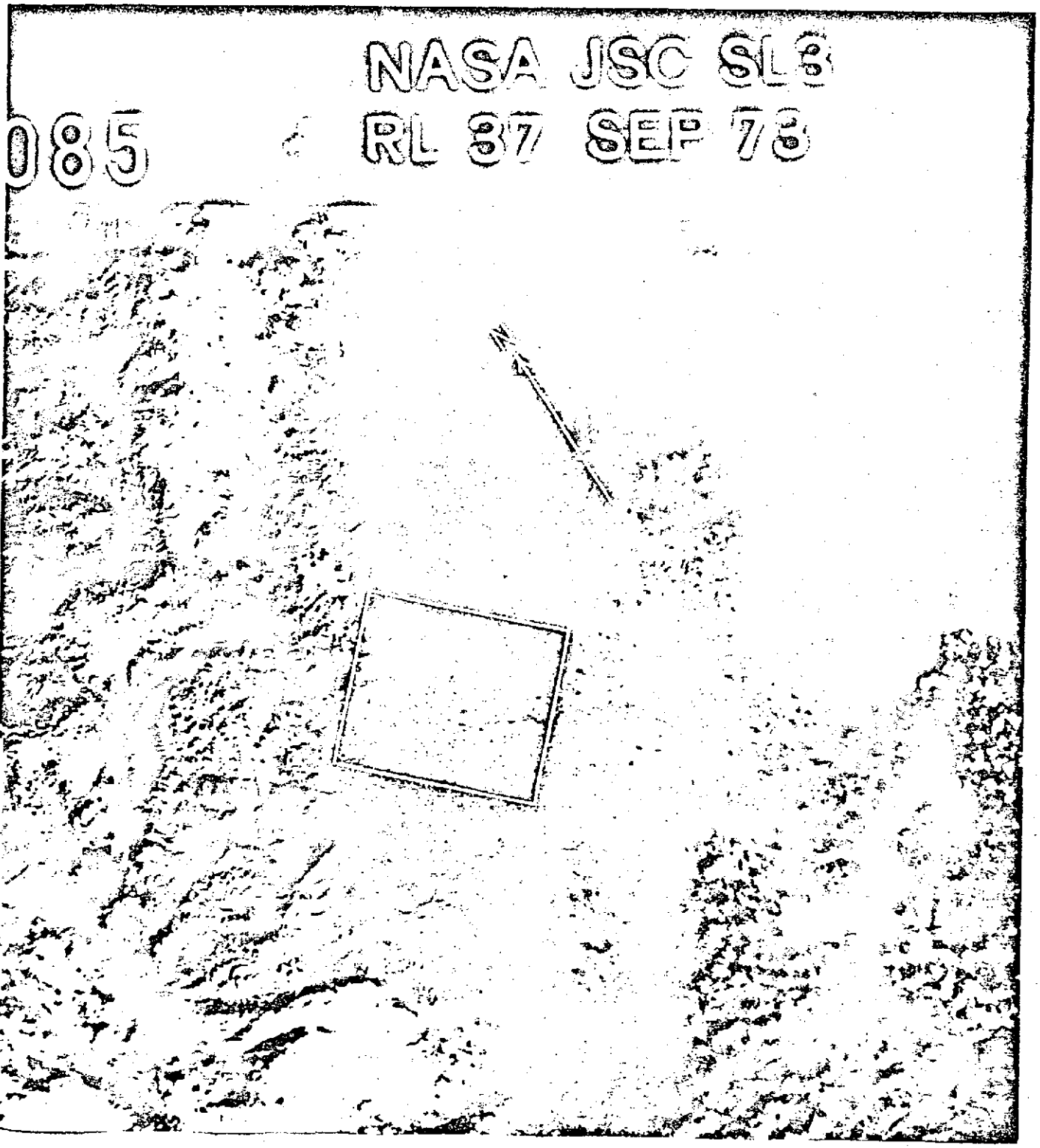


FIG. 5

FOLDOUT FRAME

BRUNO MARCOLONGO

CARTA FOTOINTERPRETATIVA DELLE TRACCE DI DIVAGAZIONI FLUVIALI NELLA PIANURA ALLUVIONALE BRENTA-ASTICO

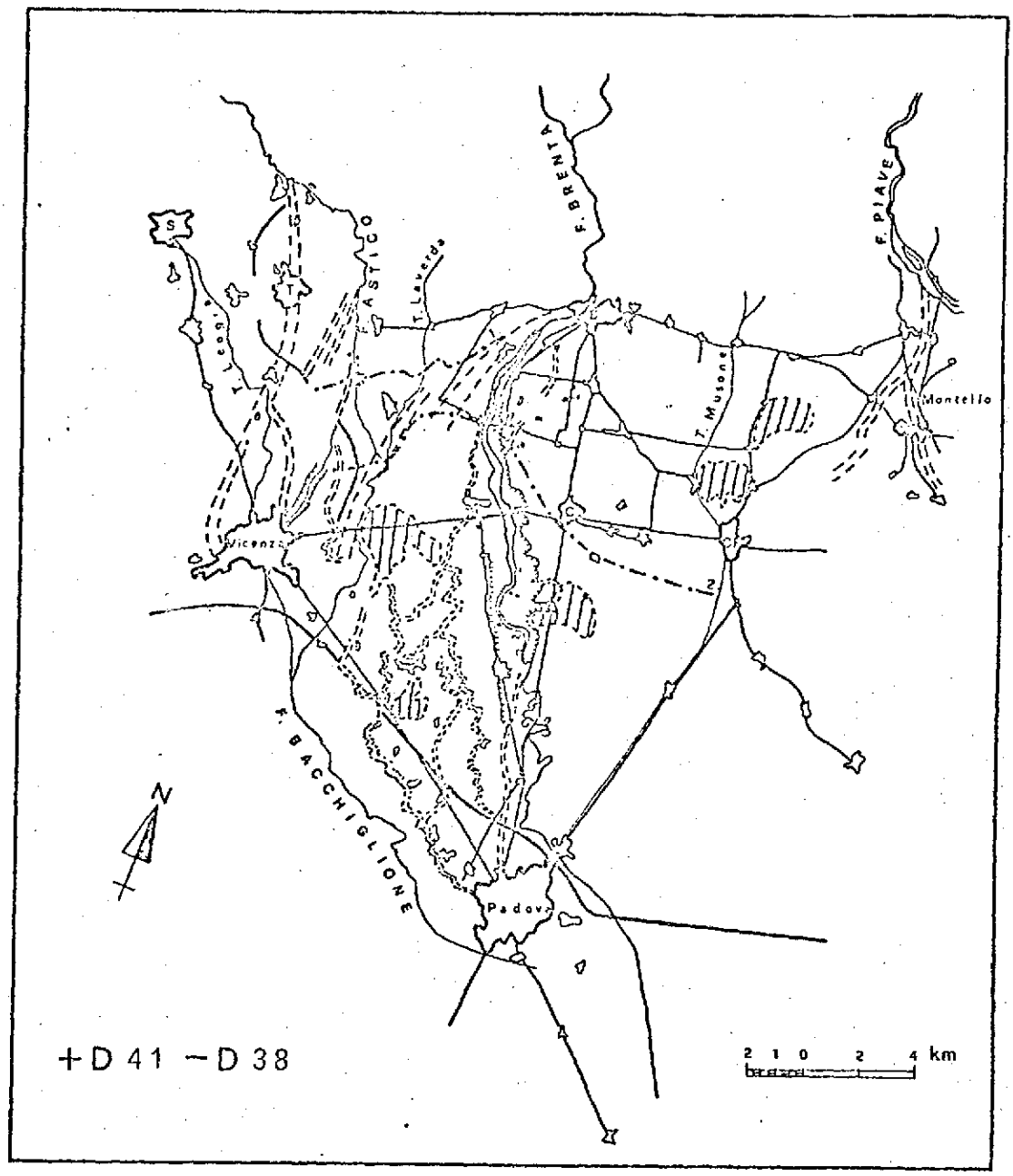
0 1 2 3 4 km

LEGENDA

- Terrazzo alluvionale.
- Meandro relitto (lanca) incassato.
- Meandro relitto a livello con la pianura circostante.
- Tratti di probabile divagazione fluviale a livello con la pianura circostante, con direzione del flusso.
- Limiti di zona con parcelle agrarie allungate nella stessa direzione (isoorientate).
- Alveo fluviale attivo.
- Alveo fluviale abbandonato.
- Cave di materiali sciolti alluvionali.
- Limite dell'area coperta dalle strisciate, loro numeri d'ordine e direzione dei voli.

Bassano del Grappa
Marostica
Thiene
Breganze
Sandrigo
Montecchio Prec.o
Caldogno
Capovilla
Giaroni
C. Alta
Cresole
Pte del Marchese
C. Altissimo
Poianella
Fiola
Cittadella
Fontaniva
S.Pietro in Gù
Barche
Grantorto
S.Giorgio in Bosco
Villalta
Le Giare
Piazzola sul Brenta
Camisano Vic.no
VICENZA
Limena
Montegalda
Cervarese S. Croce
PADOVA
Teolo
Castelfranco V.
Travettore
Fosse sup.
Fosse inf.
Friola
Basse
Basse del sud
Campiatti
Palù
Pozza
Basse
Volta Brusegana
Volta di Brenta vecchia
Giarona
Mora
Autostrada della Serenissima

FIG.6



LEGEND

- Paleo river-bed
- Alluvial terraces
- Old river winding
- Boundary of fresh water sings (1, 2, 3)
- Gravel and sand deposits
- Alluvial materials
- Urban areas
- High way
- Main road