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GEOLOGICAL SURVEY OF IRAN

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First Progress Report

Decaf 629100
Non-Exch.

Project: Regional Investigation of Tectonic and Igneous-
Geology in IRAN, PAKISTAN and TURKEY

E 7.6 - 10.39
CR-148178

This project aims at studying the Tectonic and igneous Geology,
by using Landsat 2 imageries (in IRAN, PAKISTAN and TURKEY).

Geological Survey of Iran (G.S.I.) has received Landsat 2
imageries, scale 1:1000,000. A photo index map is prepared by G.S.I.
Remote Sensing Division a copy is enclosed.

In this index map you will find 19 strips and in each strip, photos
are numbered. All photos received are archived.

For Remote Sensing study, G.S.I. have established a Remote Sensing
Division and have bought 2 viewers instruments which as yet have not
been set up. In Remote Sensing Division an experienced geologist
(Mr. I. Navai) together with three beginners are working.

The Remote Sensing Division will carry out work throughout Iran.

For Cento project namely, Investigation of Tectonic and Igneous
Geology, Paper print photos in scale of 1:1000,000 were used, (re-
ports are enclosed), these studies were done only by means of
photos and no field checking have been done. This will be under-
taken in suitable season.

Igneous geology reported by Dr. M. Amidi (Volcanologist)
and Tectonic research by G.S.I. Tectonic and seismotectonic section.

(E76-10391) GEOLOGICAL SURVEY OF IRAN
Progress Report (Central Treaty
Organization, Ankara (Turkey).) 9 p
HC \$3.50

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N76-26619

Unclas
G3/43 00391

Igneous Geology

Igneous Rocks.

Due to the lack of necessary equipment, such as coloured prints and viewers, for the study of igneous rocks of the proposed regions in Iran, we could not obtain the desired results. ERTS photos for this study were of no greater value than the air photos, with a scale of 1/50,000, but a more general view. Using the smaller scale ERTS photos gave us general information about the location of the igneous rocks and their relation to the structure and lineation of the area.

At present we are trying to put all the information about igneous rocks obtained from the interpretation of air photo, field work, published and unpublished reports and maps, on the ERTS photos, with a scale of 1/500,000, and make a map of the igneous rocks of Iran.

This map will help us to interpret the relation between major structural trends and magmatism.

Preliminary study of this small scale map has shown that most of the young volcanoes are aligned along the main structures. Sometimes, by using the trend of these volcanoes it is possible to follow the continuation of the main structures.

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TectonicBaft area:

Studying the land imageries of the Baft area (180 km north of Bandar Abbas, South of Iran) confirmed the already mapped faults of the area and shows a few newly found lineaments which should be checked on the ground. All the features (numbered on the maps) which are briefly discussed here have not been active during Recent times.

- 1- The Main Zagros fault which has been mapped by several investigators is clearly visible on the imageries. This fault is a major reverse fault which separates the Zagros fold belt of SW Iran from the Central Iranian Zone in the NE. Along this fault the Precambrian and Paleozoic metamorphic rocks have been thrust over the Pliocene conglomerates of the Zagros belt in the SW.
- 2- This is a newly found lineament on the imagery which was not previously noticed and mapped. It seems that the mud flat of Dowlatabad (south of the lineament) is limited in its northern part by this lineament and the Dolatabad depression is dowthrown along this line. Further field checking is required.
- 3- This is a vague lineament which seems is the northeastern limit of the Sirjan depression. It seem the southwestern part of this lineament has been dowthrown. Ground checking is necessary to prove it.
- 4- Khabr high angle reverse fault: Along this fault the Paleozoic and Precambrian metamorphic rocks have been upthrown and faced to the Mesozoic Series. This fault has been mapped on the areial photographs of 1:55,000 scale and is also visible on the images.

5- Gushk Fault: This lineament has been mapped before and is also clear on the images.

6- Deh Sard Fault: Mapped before and is clear on the images.

Tehran Region:

Most of the faults of this region has been mapped by several geologists.

1- North Tehran Fault: This fault was mapped by Tchalenko et al(1974) as a Quaternary fault. Along this reverse fault the northern Eocene rocks of Alborz Mountains are thrust over the Tehran alluvial deposits of Quaternary age. The fault is clearly visible on the imagery.

2- North Qazvin fault: Has been mapped recently by Annells et al (1975) in Qazvin Quadrangle and is possible to trace it on the imageries.

3- This is a newly found lineament which limits the Eocene volcanics of Eshtehard-South Tehran area in the north. Field checking is required for proving it.

4- Afresh longitudinal fault in Eocene volcanics which along most part of it, is between Quaternary depression and Eocene volcanics

5- A transverse lineament which needs ground checking

Enclosed: 2 maps and one index map

Geology Department
Remote Sensing Division
Index Of Landsat Imageries



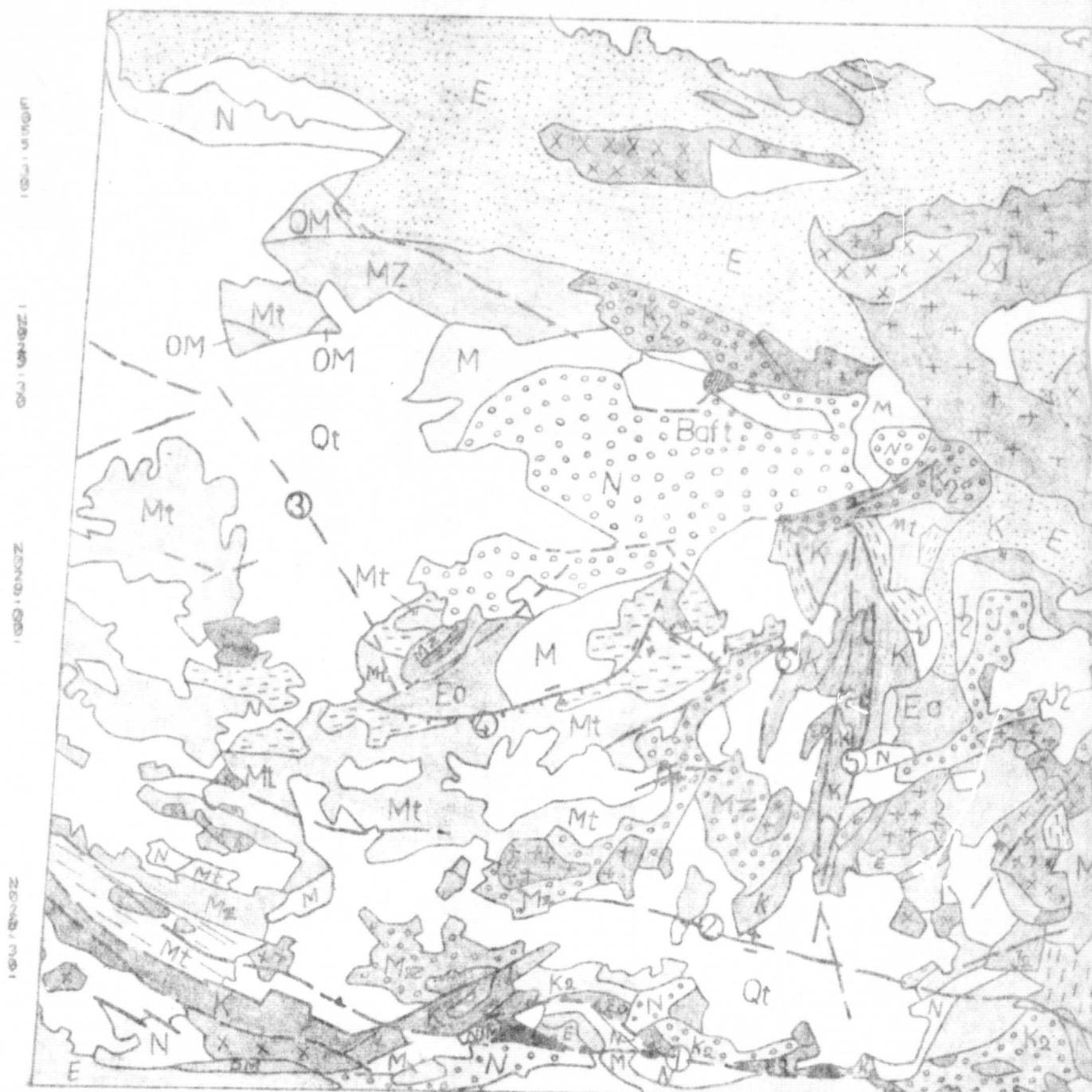
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BAFT AREA

E056-001

E056-301

E057-001



1055-30
1056-001
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1058-001
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Qt

Quaternary i.g.

N

Mio-Pliocene (Neogene i.g.)

N

Conglomerate

M

Miocene i.g.

OM

Oligo-Miocene, including Oligocene red beds

E

Eocene

E

Volcanic Eocene i.g. (Green beds of Alborz)

EO

Paleogene of SE Iran (may include K₂)

MZ

Mesozoic i.g. (mainly limestone)

K

Cretaceous i.g.

K₂

Upper Cretaceous (Turon - Senon)

K₂

Coloured Melange

MZ

Siliceous facies of Jurassic-Cretaceous (Zagros)

J₂

Upper Jurassic

PA

Paleozoic i.g.

Mt

Metamorphics i.g.

—

Schists and Slates

- - -

Marbles

acid

acid

intermediate igneous rocks

intermediate igneous rocks

basic

basic

Diapiric Uplifts (mainly salt domes)

Diapiric Uplifts (mainly salt domes)

+

Extrusive

x

Intrusive

1:1000000

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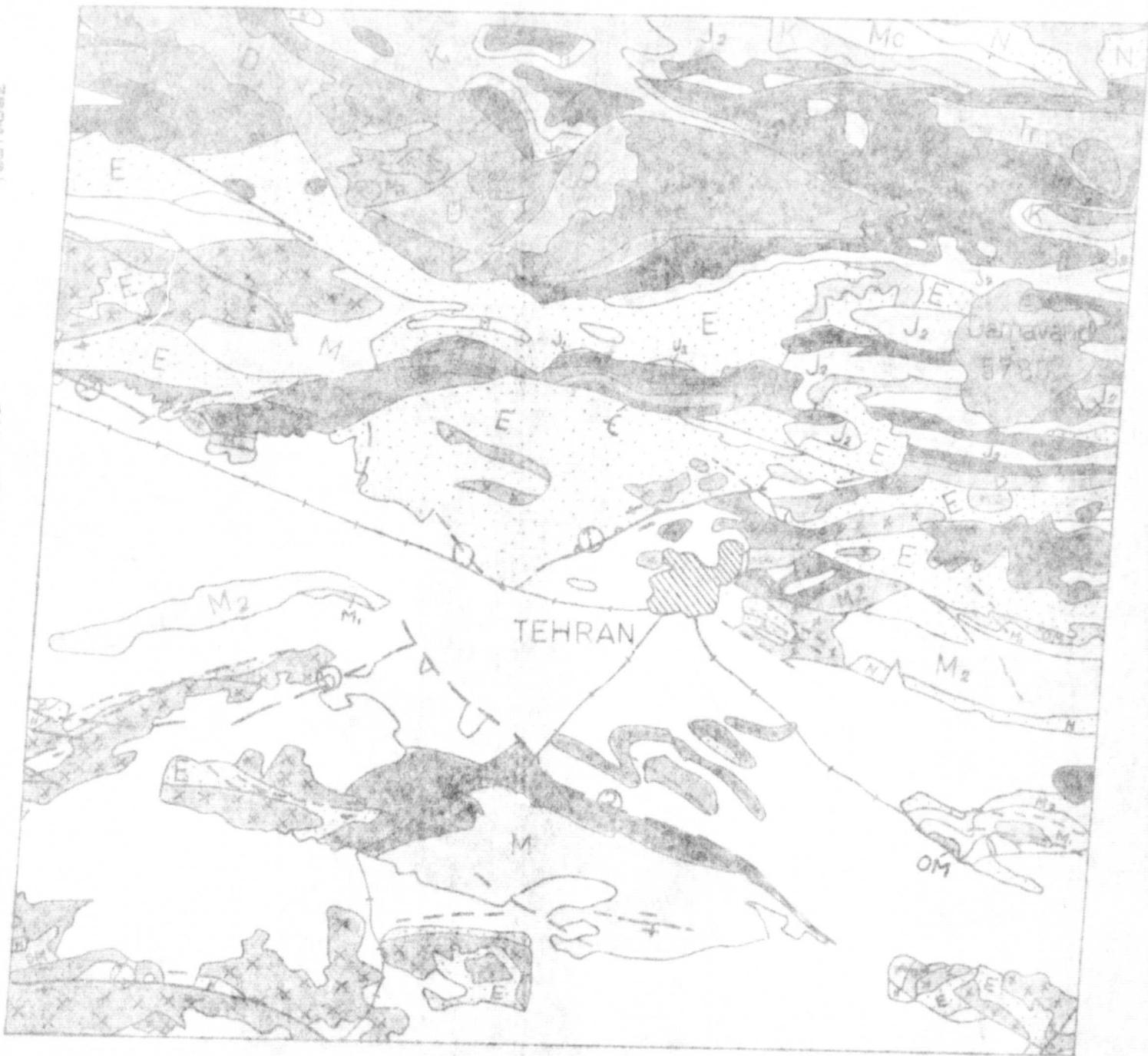
TEHRAN AREA

E051-001

E051-301

E052-001

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01 JUKTS C N35-40/E051-15 N N35-46/E051-10 PLS 7 R SIN EL60 AZ103 190-1800-0-1-N-D-IL NASA ERTS E-2170-06322-7 01

E050-301

E051-001

E051-301

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Q

Quaternary i.g.

■

Plio - Pleistocene, Fresh water Limestone

N

Mio-Pliocene Conglomerate

M

Miocene i.g.

Mc

Caspian Miocene

M₂

Upper Part Upper Red Formation (Fars)

M₁

Lower Part

OM

Oligo - Miocene including oligocene red beds

E

Volcanic Eocene

■

Mesozoic i.g. (mainly Limestone)

■

Cretaceous i.g.

■

Upper Cretaceous (Turon - Senon)

K

Lower and Middle Cretaceous

J₂

Upper Jurassic limestone (may include K.)

■

Lower to Middle Jurassic

Tr

Triassic

■

Paleozoic i.g.

■

Permian - Carboniferous

■

Devonian (Partly Old Red type)

■

Pre - Devonian Paleozoic

■

Metamorphic i.g.

■

intermediate
basic igneous rocks

x x x x
x x x x

Extrusive 1:1000000

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