A HUGE FOSSIL LINEAR ZONE OF WEAKNESS IN THE AREA OF THE ANCIENT MARTIAN UPLANDS? H.-P. Jöns; Geographisches Institut der Universität; -Am Hubland--; 97074 Würzburg; Germany

The spatial distribution of linear escarpments and the numerous upland volcanoes which are aligned along those features indicate the existence of a linear zone of weakness which sets in south of Apollinaris Patera, includes the Sisyphi Montes, and can be detected as far north as appr. -60° Lat.

The identification and mapping of the main linear features within the area of the ancient martian uplands leads together with the numerous upland volcanoes which have been described previously (1) to the result that nearly the entire area of the martian uplands is transsected by a huge zone of weakness.

That zone sets in south of Apollinaris Patera (A.P.) which is probably situated astride the northern end of the entire feature (Fig. 1). Southward from A.P. this zone is indicated by Ma'adim Vallis which is at least partially structurally controlled. More southward the Eridania Scopulus and the Ulyxis Rupes and numerous unnamed linear escarpments indicate the continuation of the entire feature together with the Dorsa Brevia. At least ten upland volcanoes are situated along those features.

Of special interest are in this context the Sisyphi Montes, an isolated group of six mountains amongst which are probably four upland volcanoes and two mountains the flanks of which show structural influence. The entire group is probably situated at the intersection of two linear features which trend perpendicularly to each other (2).

After passing the South Pole and the Sisyphi Montes the entire feature can be traced northward until appr. -20° Lat. In that area it is gradually cut and/or deflected by East-West trending linear features (Fig. 1).

References:

LEGEND (see next page):
A.P. - Apollinaris Patera; E.S. - Eridania Scopulus; S.M. - Sisyphi Montes; V.M. - Valles Marineris; P.R. - Promethei Rupes (a very old and highly degrades impact).
LINEAR ZONE OF WEAKNESS, MARS?  

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