

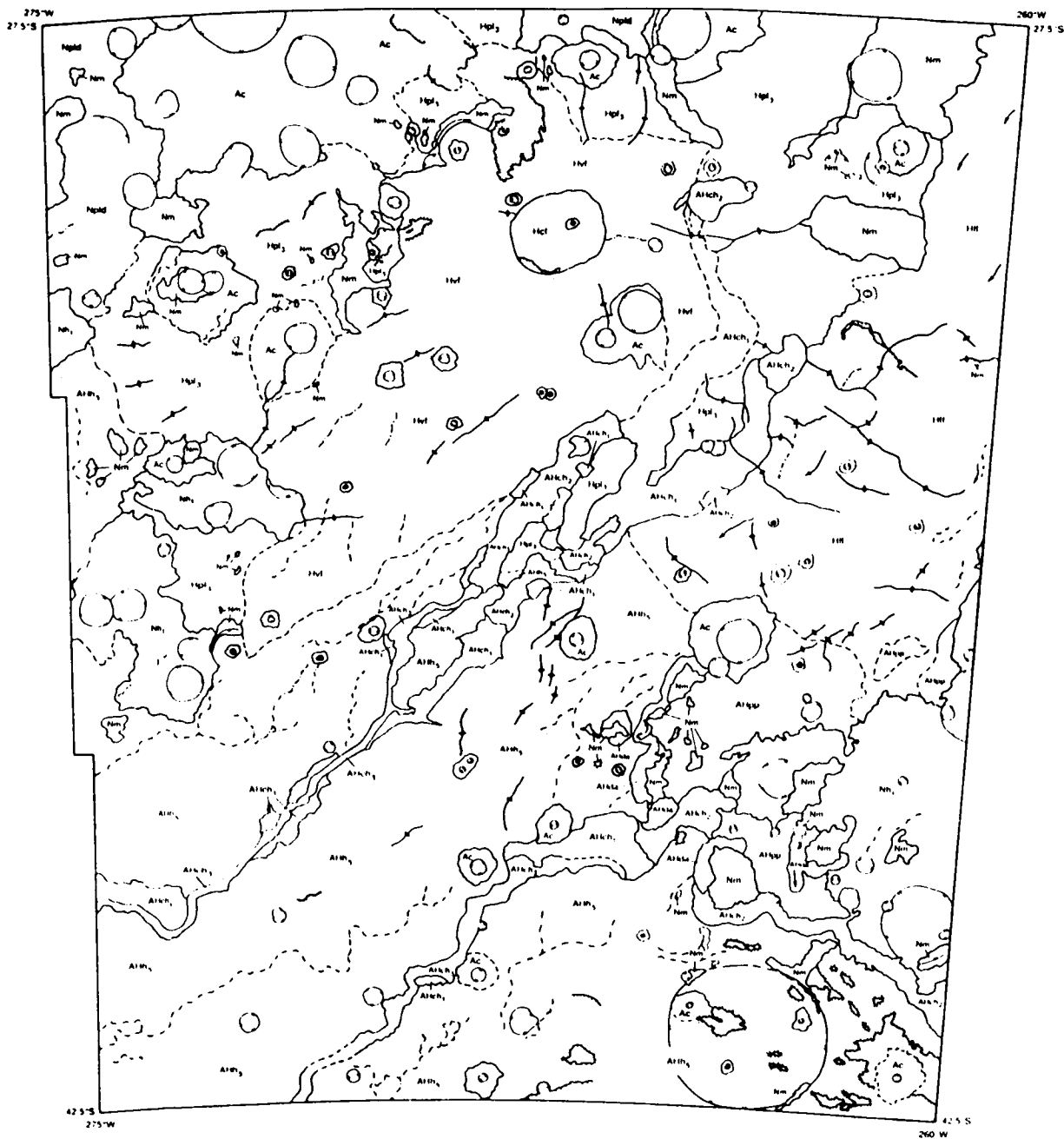
**Mars Geologic Mapping: Dao, Harmakhis, and Reull Valles Region.**

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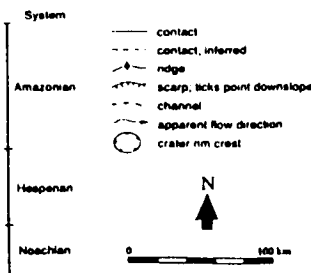
The east rim of Hellas basin is a complex geologic region affected by volcanic, tectonic, channeling, and resurfacing processes [1,2,3,4]. A regional geologic map of the area between 27.5-42.4°S and 260-275°W was compiled in order to establish general stratigraphic relationships between and among the geologic units exposed in the region (Figure 1) [5]. The southern one-third of the regional map, the area covered by three MGM 1:500,000 quadrangles -40272, -40267, and -40262, is to be mapped in more detail in this project.

Dao and Harmakhis Valles have lengths of about 500 km and trend approximately S45W. Outflow channel deposits have been subdivided into three facies which are interpreted to be (1) remnants of the plains in which the outflow channels formed (AHch<sub>1</sub>), (2) channel floor materials which resulted from uniform removal of materials or uniform collapse (AHch<sub>2</sub>), and (3) deposits suggesting fluvial modification (AHch<sub>3</sub>). Cross-cutting relationships between these channel deposits and the channeled plains rim unit (AHh<sub>5</sub>) indicate that channeling on the rim unit pre-and post-dates valles collapse. Details of the chronology of channeling events and of channeling relative to resurfacing events will emerge from geologic mapping at the 1:500,000 scale.

**References:** [1] Schultz, P.H. et al., 1982, *Lunar Planet. Sci. Conf. XIII*, 700-701. [2] Schultz, P.H., 1984, *Lunar Planet. Sci. Conf. XV*, 728-729. [3] Zurek, R.W., 1982, *Icarus*, 50, 288-310. [4] Greeley, R. and Guest, J.E., 1987, *U.S. Geol. Survey Misc. Inv. Series Map I-1802B*. [5] Crown, D.A. et al, 1990, *Lunar Planet. Sci. Conf. XXI*, 252-253.



Ac	Crater materials
Alch1	Debris apron materials
Alch2	Channel floor materials - sculpted
Alch3	Channel floor materials - smooth
Alch4	Channel floor materials - irregular
Alch5	Channelled plains rim unit
Alch6	Pried plains materials
Hcl	Calders filling materials
Hv	Volcanic flank materials
Hf	Flank flow materials
Hs	Smooth plateau materials
Hpd	Dissected plateau materials
Nm	Mountainous materials
Nh	Basin rim unit



CORRELATION CHART

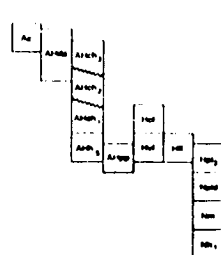


Figure 1. Geologic sketch map of the Hadriaca Patera region on the east rim of the Hellas basin.

Crown, D.A., Price, K.H., and Greeley, R., (1990) Evolution of the East Rim of the Hellas Basin, Mars. In *Proceedings of the Conference on Lunar and Planetary Science 21*, p.252-253. Houston, Tex.: Lunar and Planetary Institute.