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Hydrae Cavus: a tectonic basin in the Valles Marineris region

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[POSTER]

Marineris is probably composed of large sheared tectonic blocks that moved relative to each other while Valles Marineris was being stretched perpendicular to its main, ESE trend. We have sought other evidence of NE-SW shears in the vicinity of Valles Marineris, and found it at Hydrae Cavus, a 20 by 60 km, 1600 m deep basin located 130 km east of Candor Chasma. Using available data, we carried out new mapping of the tectonic features in and around the depression. We interpret Hydrae Cavus as a pull-apart basin, with a stretching direction N-S and a strike-slip movement along ENE-WSW. Morphology of the basin indicates a dextral movement. The basin kinematics is consistent with the kinematics of the brittle-plastic shear zones in the Hebes and Ophir Chasma.