



## Marker strata and the Ius light blocks, Mars

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The HiRISE image TRA\_000823\_1720 shows the well-known strata and faults on one light-toned block on the floor of Ius Chasma. The marker layers, identified from this block, were cut by several strike-slip faults. The right-handed NW-SE of the main strike-slip fault has a 70 meters displacement and adjoining drag-bended strata close to the fault plane. Smaller faults that cut across the parallel marker layers in several locations form conjugate fault systems. The faults are restricted within this light block without continuation into the surrounding terrain. The depth of the block was calculated to be  $600 \pm 150$  meters.

Similar marker layers, identified from other light-toned blocks on the floor of Ius Chasma, help to locate additional strike-slip faults and to understand block placements to their present locations. Major strike-slip faults separate blocks from each other while smaller faults are occur only between the blocks or within each block. The block-separating strike-slip faults are longer and have largest relative movements. They are also handed according to the block location and relative block movements.

The blocks were previously proposed to have slid, fallen or toppled down from the stratified canyon walls. Similarly orientated layered strata units, existence of the drag features, complicate intra-block faults with an echelon and conjugate arrangements, and the absence of similar faults outside the blocks evidence landslide event(s) in which the stratified material slid down into the present location from their original layering environment that was high in the stratigraphy of the planitia surrounding the present Ius Chasma.