

## Honeybee Robotics Surface Science Tools

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Honeybee Robotics has been developing gas assisted excavation systems and drills/penetrometers for planetary exploration. These systems tend to be simpler and in turn more robust than similar devices powered by electro mechanical actuators. The principle lies in injecting of gas into regolith and creating high pressure cells. As gas follows the path of least resistance (back up) it carries soil particles with it. The mining tube can be positioned in such a way as to capture this dusty gas (regolith particles suspended in gas) for further processing (e.g. oxygen extraction) or diverted away from a hole and onto the surrounding ground.