Department of Applied Computing

SpaceWire Router Technology Makes ASIC Interfacing Easy

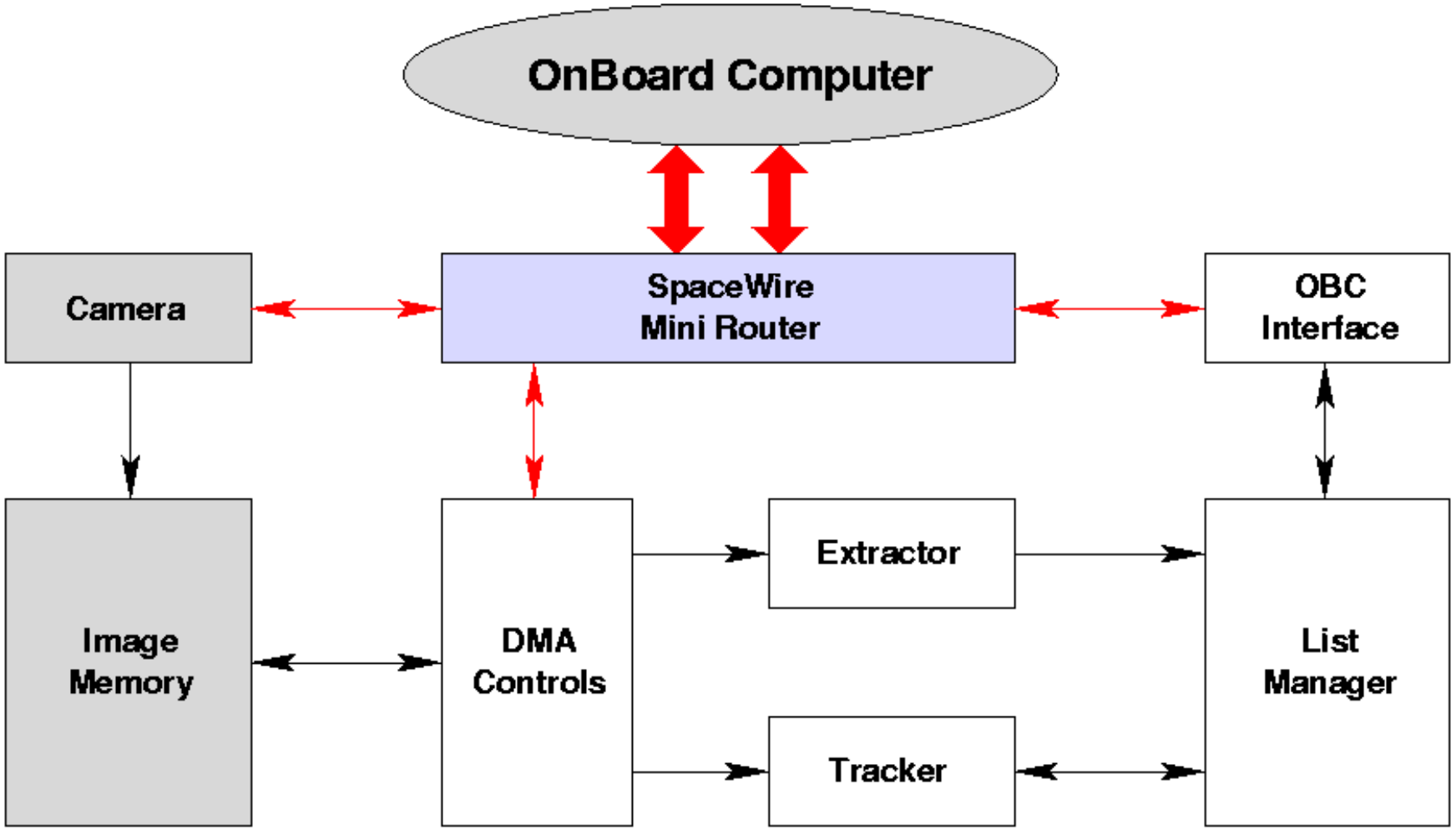
Steve Parkes

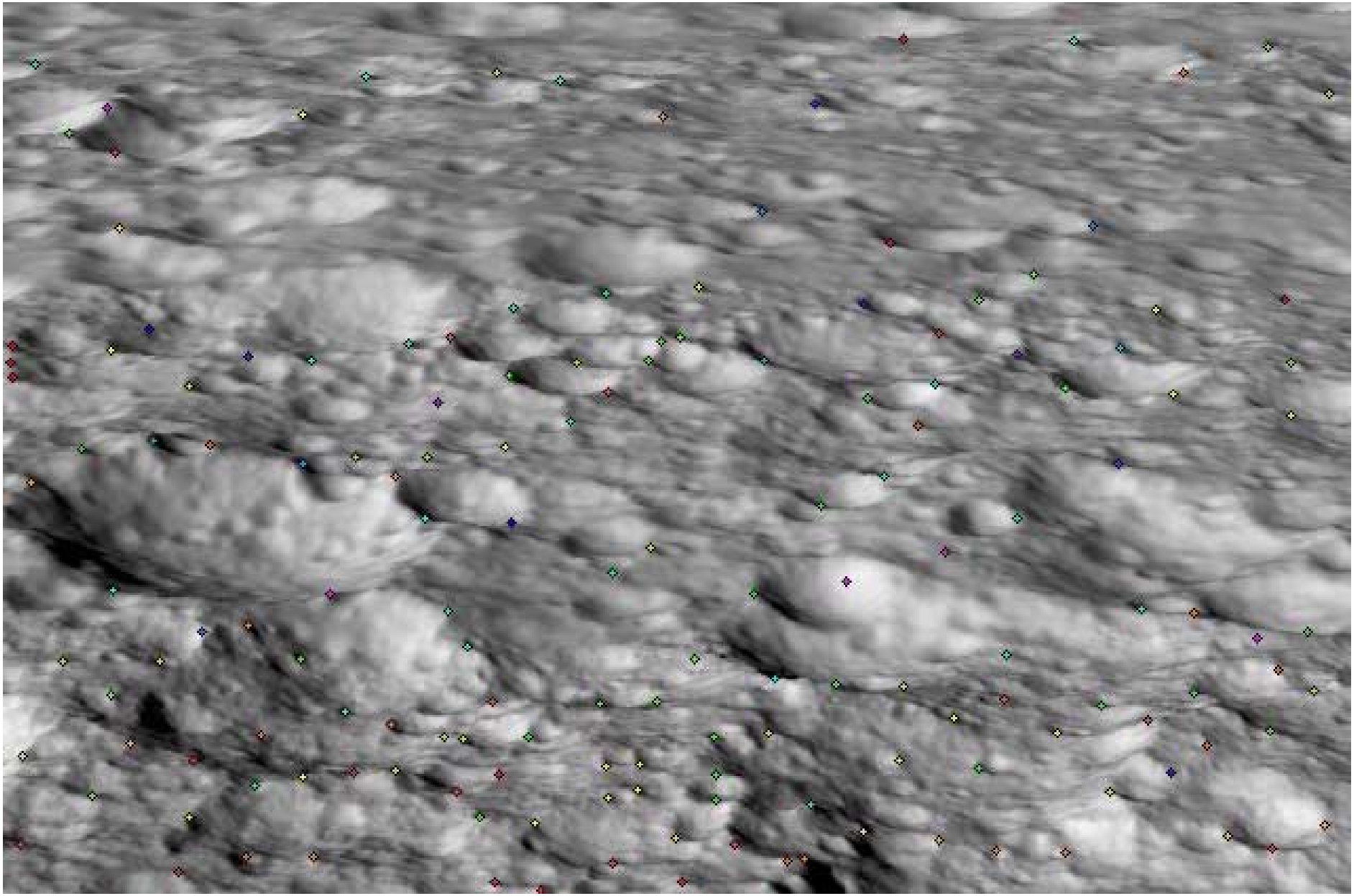
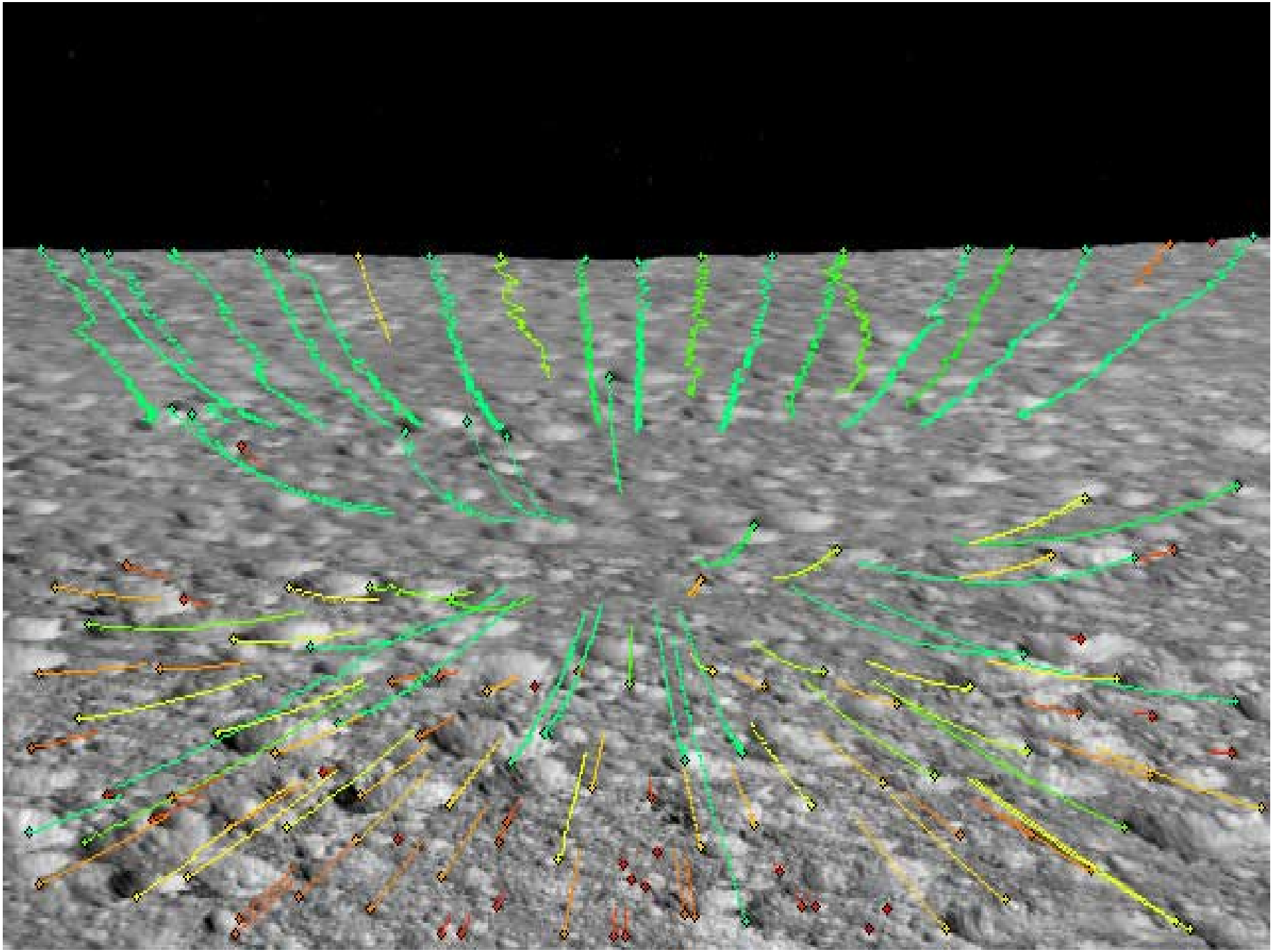
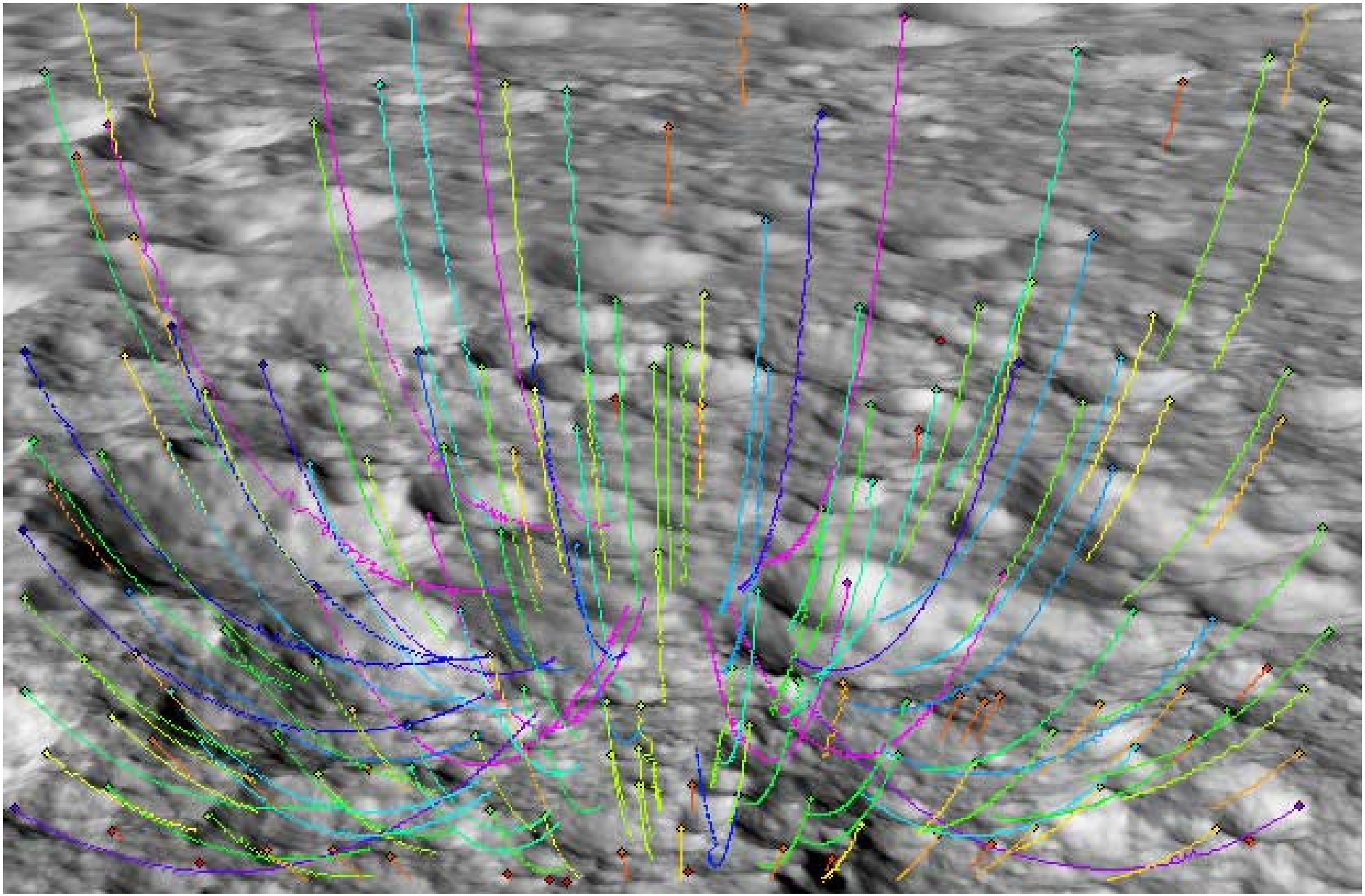
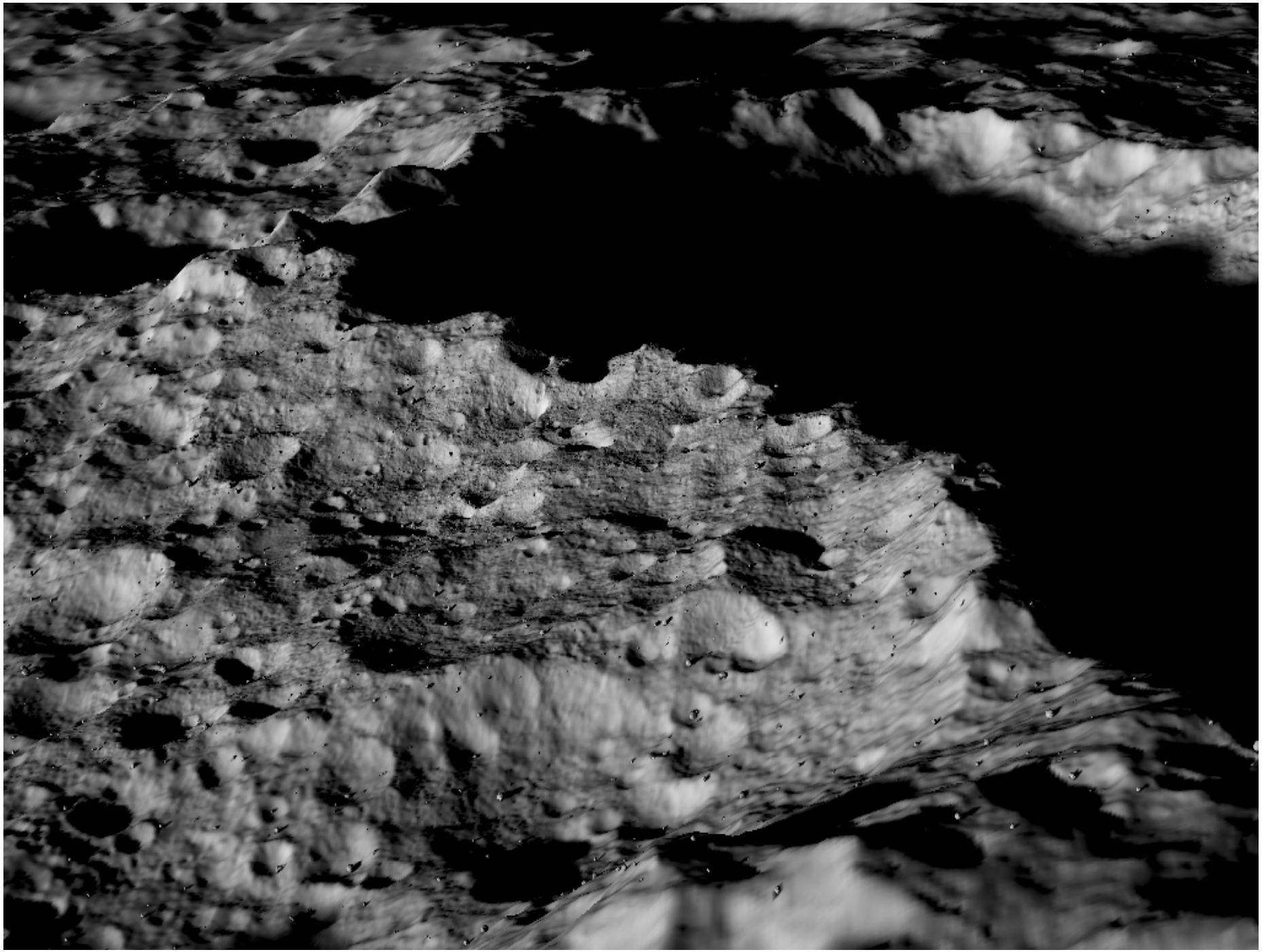
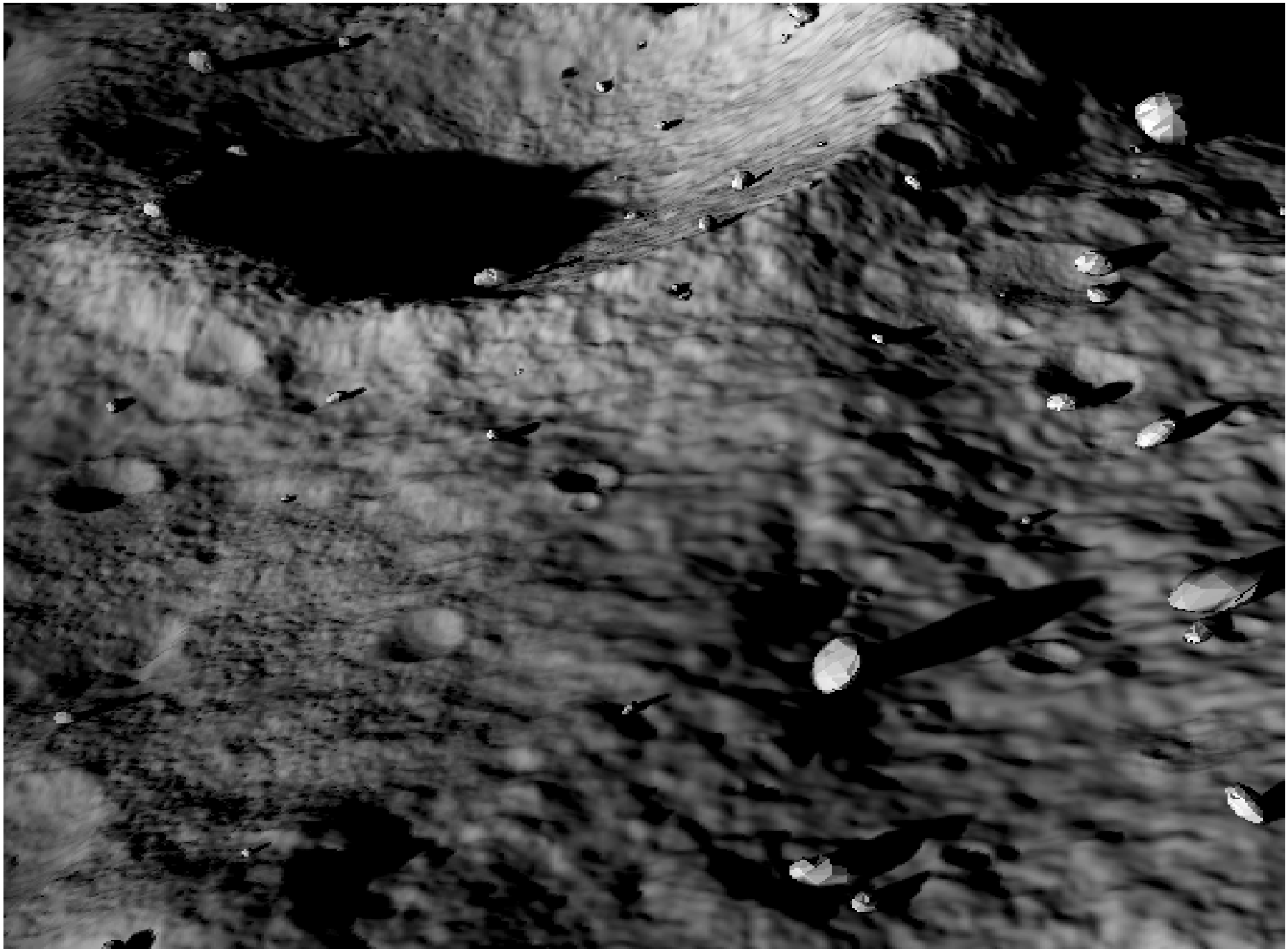
Chris McClements

Martin Dunstan

Why not use PCI?

- Number of pins required:
  - especially when adding redundancy
- Distance between components:
  - PCI has a limited bus length
  - need to put FEIC close to the GNC processor
- Produces a highly-coupled architecture


OnBoard Computer
Camera
SpaceWire
Mini Router
OBC
Interface
Image
Memory
DMA
Controls
Extractor
Tracker
List
Manager

Why use SpaceWire?

- Fault-tolerant/scalable bandwidth:
  - add extra links where necessary
- Plug & play:
  - arbitrary topology
  - supports long distances between components
  - can put FEIC near camera (far from GNC)
- Produces loosely-coupled architecture