

Patterns In Debris Disks: No Planets Required?

Debris disks like those around Fomalhaut and Beta Pictoris show striking dust patterns often attributed to hidden exoplanets. These patterns have been crucial for constraining the masses and orbits of these planets. But adding a bit of gas to our models of debris disks--too little gas to detect--seems to alter this interpretation. Small amounts of gas lead to new dynamical instabilities that may mimic the narrow eccentric rings and other structures planets would create in a gas-free disk. Can we still use dust patterns to find hidden exoplanets?