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Abstract: Core accretion and disk instability require giant protoplanets to form in the presence of disk gas. Protoplanet migration models generally assume disk masses low enough that the disk's self-gravity can be neglected. However, disk instability requires a disk massive enough to be marginally gravitationally unstable (MGU). Even for core accretion, a FU Orionis outburst may require a brief MGU disk phase. We present a set of three dimensional, gravitational radiation hydrodynamics models of MGU disks with multiple protoplanets, which interact gravitationally with the disk and with each other, including disk gas mass accretion. Initial protoplanet masses are 0.01 to 10 MEarth for core accretion models, and 0.1 to 3 MJup for Nice scenario models, starting on circular orbits with radii of 6, 8, 10, or 12 AU, inside a 0.091 MSun disk extending from 4 to 20 AU around a 1 MSun protostar. Evolutions are followed for up to aout 4000 yr and involve phases of relative stability (e ~ 0.1) interspersed with chaotic phases (e ~ 0.4) of orbital interchanges. The 0.01 to 10 MEarth cores can orbit stably for about 1000 yr: monotonic inward or outward orbital migration of the type seen in low mass disks does not occur. A system with giant planet masses similar to our Solar System (1.0, 0.33, 0.1, 0.1 MJup) was stable for over 1000 yr, and a Jupiter-Saturn-like system was stable for over 3800 yr, implying that our giant planets might well survive a MGU disk phase.