Subject: Re: plotting particle data with halos?
Posted by Craig Markwardt on Fri, 17 Jan 2003 04:20:59 GMT
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Matt Wood <wood@astro.nospam.fit.edu> writes:

> I've got particle data generated from 'smoothed particle hydrodynamics'
> code that I'd like to visualize using idl. Are there any routines that
> will plot particles with 'halos' instead of simple colored points? If
> you'd like to see an example of what we're doing, please see
> www.astro.fit.edu/wood/100k34.gif
> It's a simulation of an interacting binary star system that has an
> accretion disk. Color indicates temperature in the disk.

The easiest thing to do might be to plot to the Z buffer, capture it, then convolve with a gaussian, or even simpler, just SMOOTH it. That will give a more smooth look, but of course every point will have the same "halo" size.

However, if you really need variable size smooth particles, then you need to kick it up a notch. You could compute a 2D gaussian for each point, add them to an IDL array one at a time, but that might get pretty computationally expensive. Better might be to make up a library of 2D gaussians and then add those in turn, picking the closest one.

A trick combination of the 1st (convolution) and 2nd (addition of gaussians) approaches would be to sort the points according to their particle size, partition them into a few groups, make plots+convolutions of each using the right particle size, then add them up.

Cool sims! I work on X-ray binaries.

Craig

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