Amir M. Michaelis <amir.m@aminor-tech.com>

## Luminosity results
4 messages

**Amir M. Michaelis** <amir.m@aminor-tech.com>       Wed, Nov 20, 2019 at 3:13 PM
To: Amit Kashi <kashi@ariel.ac.il>

Hi,
I have generated plot of different range in the visual (the missing points are missing spectra).
It seems somewhat off, so I rerun radmc with dust model not just free-free.
This add more complex scattering.
The opacity is not just free-free where in the code it translate to:
$\alpha_{\nu}^{eff} = 0.212 \frac{N_e N_i}{\nu^{2.1} T^{1.35}}$
It also take some value of absorption from lockup table.
I used the standard that recommended by radmc.
Although this relevant usually to low temperature.
Onces I will have to plots I will send it to you.
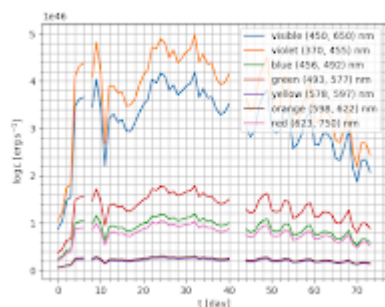
Amir.

--
**Amir Goshen Michaelis**
E: amir.m@aminor-tech.com
T: +972.9.792.6850
M: +972.54.9877933
*18 Sagi st., Alfe-Menashe, 44851, Israel*



**multi-spec.png**
97K

**Amit Kashi** <kashi@ariel.ac.il>       Thu, Nov 21, 2019 at 6:19 AM
To: "Amir M. Michaelis" <amir.m@aminor-tech.com>

Hi

I was in the Technion yesterday and showed your work to Noam. He thinks he sees spiral arms in your disk as it rotates.

If you plot the disk with different color map limits it would be easier to see.

The spiral arms may rotate in a different angular velocity than that of the disk.

Please write me agin what you are doing with
1. Viscosity
2. Equation of state
3. Self gravity

Amit

Amit

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**From:** Amir M. Michaelis <amir.m@aminor-tech.com>
**Sent:** Wednesday, November 20, 2019 3:13:24 PM
**To:** Amit Kashi <kashi@ariel.ac.il>
**Subject:** Luminosity results

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**Amir M. Michaelis** <amir.m@aminor-tech.com>    Thu, Nov 21, 2019 at 2:04 PM
To: Amit Kashi <kashi@ariel.ac.il>

Hi,
What do you mean use different color map?
like use jet or hot or something like that? or to try and change the dynamic range of the current colormap?
In this run we used:
Very small viscosity 0.051 (that is diff_visc_mu=diff_visc_nu=true)
Also there is an artificial viscosity embedded in the code (cvisc) of about 0.1.
We used gamma equation of state with density and internal energy as free parameters (i.e. eosModeInit=eosMode="dens_ie").
For gravity we used point mass located at the center but set the gravity unit on only outside the $4.4R_{sun}$ region (the main star we kept fixed).
We use ptmass=1.59e+34=8M_sun.

Maybe we can do some kind of manipulation on the data to visualize/captured the effect ?

Amir.

[Quoted text hidden]

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**Amit Kashi** <kashi@ariel.ac.il>    Thu, Nov 21, 2019 at 3:01 PM
To: "Amir M. Michaelis" <amir.m@aminor-tech.com>

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**From:** Amir M. Michaelis <amir.m@aminor-tech.com>
**Sent:** Thursday, November 21, 2019 14:04
**To:** Amit Kashi <kashi@ariel.ac.il>
**Subject:** Re: Luminosity results

Hi,
What do you mean use different color map?
like use jet or hot or something like that? or to try and change the dynamic range of the current colormap?

-- the dynamic range, so it better resoves the outer parts of the disk.

In this run we used:
Very small viscosity 0.051 (that is diff_visc_mu=diff_visc_nu=true)
Also there is an artificial viscosity embedded in the code (cvisc) of about 0.1.
We used gamma equation of state with density and internal energy as free parameters (i.e. eosModeInit=eosMode="dens_ie").
For gravity we used point mass located at the center but set the gravity unit on only outside the 4.4R_sun region (the main star we kept fixed).
We use ptmass=1.59e+34=8M_sun.

-- Thanks. I don't know if such density waves can exist without self gravity. You should make a calculation (if you haven't already) to quantify the importance of self gravity vs. gravity from the star. As this is 1Msun in a small region (a disk) self gravity could be important.

Maybe we can do some kind of manipulation on the data to visualize/captured the effect ?

-- Maybe. What exactly?

Amir.

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