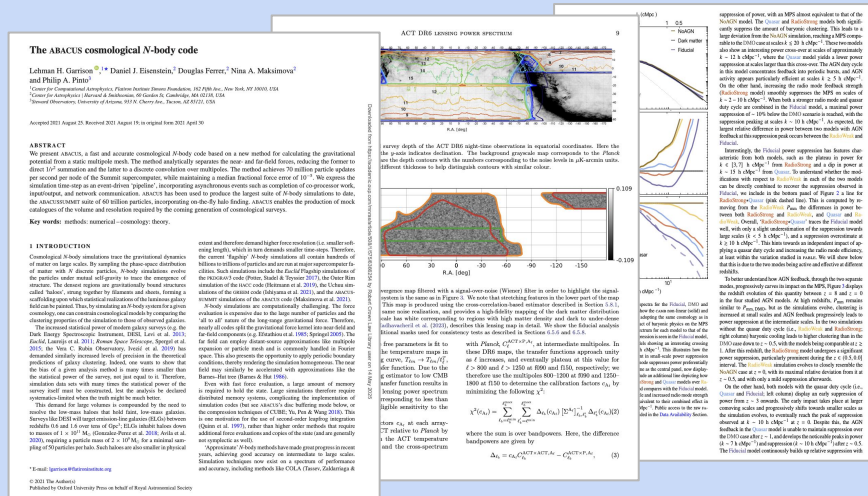


full manuscript of research paper



dataset access

NGC1300-0.89sec_MAPS.fits	1.42 GB	UFS
hisp_phangs-jwst_jwst_miri_ngc1300_f100w_vip0p1_img...	154 MB	UFS
hisp_phangs-jwst_jwst_miri_ngc1300_f110w_vip0p1_img...	154 MB	UFS
hisp_phangs-jwst_jwst_miri_ngc1300_f210w_vip0p1_img...	154 MB	UFS
hisp_phangs-jwst_jwst_miri_ngc1300_f770w_vip0p1_img...	154 MB	UFS
hisp_phangs-jwst_nircam_ngc1300_f200w_vip0p1_img.fits	2.66 GB	UFS
hisp_phangs-jwst_nircam_ngc1300_f300m_vip0p1...	433 MB	UFS
hisp_phangs-jwst_nircam_ngc1300_f335m_vip0p1...	433 MB	UFS
hisp_phangs-jwst_nircam_ngc1300_f360m_vip0p1...	433 MB	UFS

execution specs

- needs GPU time? ☒
- needs Python? ☒
- needs astropy? ☒

objective, author-written tasks

TASK 1: Calculate the orbital separation evolution during Roche Lobe overflow.

DIFFICULTY: 2

ANSWER: 300

TASK 1: Predict the number of diagonal features in the region. $Y: 7$ [0, 0.5]

LLM agent in code execution environment

AGENT: I see - the samples are under the 'posterior_samples' subgroup. Let's access that:

```
# Check available keys in GW200105
print("Checking available keys in GW200105...")
with h5py.File(gw200105_path, 'r') as f:
    model = 'C01:Combined_PHM_high_spin'
...
```

AGENT: Now I have a good understanding of the file structure. Let's load all the event data and start implementing the hierarchical Bayesian model.

```
class HierarchicalModel:
    def __init__(self, event_samples, spin_model="ZS", mass_model="1C", beta=0):
        """
        Initialize the hierarchical model.
        """
        ...
```

full trace

```
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