

# Giant Planet Formation

ASTR558 Final Project

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## ABSTRACT

**Background and Context:** Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetur id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

### 1. KEY CONCEPTS

#### 1.1. Core Accretion

##### 1.1.1. How does it work?

(Pollack et al. 1996)

##### 1.1.2. Critical core mass

##### 1.1.3. The end of accretion

##### 1.1.4. Timescale limits

#### 1.2. Direct Collapse

##### 1.2.1. How does it work?

##### 1.2.2. Migration

### 2. RECENT RESEARCH

### 3. UNSOLVED QUESTIONS

- Challenges with direct collapse (Forgan & Rice 2013)
- Core accretion doesn't account for compositional gradients (D'Angelo & Lissauer 2018)

## REFERENCES

D'Angelo, G., & Lissauer, J. J. 2018, in Handbook of Exoplanets, ed. H. J. Deeg & J. A. Belmonte, 140, doi: [10.1007/978-3-319-55333-7\\_140](https://doi.org/10.1007/978-3-319-55333-7_140)

Forgan, D., & Rice, K. 2013, MNRAS, 432, 3168, doi: [10.1093/mnras/stt672](https://doi.org/10.1093/mnras/stt672)

Pollack, J. B., Hubickyj, O., Bodenheimer, P., et al. 1996, Icarus, 124, 62, doi: [10.1006/icar.1996.0190](https://doi.org/10.1006/icar.1996.0190)



**Figure 1.** An illustration of different giant planet formation channels. (Credit: NASA and A. Feild (STScI))