

## Intellectual Merit Criterion

### Overall Assessment of Intellectual Merit

Very Good

### Explanation to Applicant

Keaton has been a research assistant for a few years. He has demonstrated his research ability by studying the formation of massive star clusters in a nearby galaxy. He has done substantial analysis and will write a paper shortly before he graduates. He is expected to be the first author in a major journal. It is rare for an undergraduate to achieve that distinction.

## Broader Impacts Criterion

### Overall Assessment of Broader Impacts

Excellent

### Explanation to Applicant

Keaton's broader impacts are exceptional. He has taken leadership in the Society of Physics Students by increasing student participation and providing outreach to many groups of students. Leadership is essential for scientists because they often work in large groups. From reading the application, as I am not an expert in his field, I cannot ascertain the importance of his proposed research topic related to the field. It would have been beneficial if the importance were discussed in more detail.

### Summary Comments

Keaton is a solid student who has shown leadership ability. He is proposing an outstanding outreach program when he enters graduate school. He has demonstrated his research ability and is destined to be an outstanding astronomer.

## Intellectual Merit Criterion

### Overall Assessment of Intellectual Merit

Excellent

### Explanation to Applicant

The applicant has a very strong academic background with multiple research experiences. They are currently working on a first-author paper. The applicant explains their past research experience very well. They propose to use PHANGS-JWST survey data to look at actively forming star clusters. The proposal has three main science goals with clear descriptions of each and specific tasks to be accomplished outlined.

## Broader Impacts Criterion

### Overall Assessment of Broader Impacts

Excellent

### Explanation to Applicant

The applicant has previously been very involved in campus culture and taken a leadership role in a number of outreach events, such as creating an undergraduate ambassador program. Their research proposal contains very specific and ambitious outreach goals, including starting a summer astronomy camp to mentor middle and high school students.

### Summary Comments

This is overall a very strong application, with a clear and well-written science case and a well-motivated broader impact plan.

## Intellectual Merit Criterion

### Overall Assessment of Intellectual Merit

Excellent

### Explanation to Applicant

The applicant proposes to investigate actively forming star clusters in the local universe to build population statistics of star clusters and their surrounding environments using data from the PHANGS-JWST survey. The prior experience studying NGC 253 using ALMA data well-positioned the applicant to perform the proposed research successfully. The research has the potential to provide new insight into the life cycle of baryons.

## Broader Impacts Criterion

### Overall Assessment of Broader Impacts

Very Good

### Explanation to Applicant

The applicant has done outreach with the Society of Physics Students and intends to continue with outreach for youth and adults at the graduate school. The applicant proposes to extend the undergraduate mentoring program, Polaris, to middle and high schoolers and plans to push the citizen science program to the general public.

## Summary Comments

The applicant aims to study star clusters in the local universe using the JWST observations. The project plan is well-developed, and the applicant has the skills to perform the work. The recommendation letters from the past advisors are strong. The advisor's expertise and the lead role in the PHANGS-JWST collaboration will benefit the project. The results from the research could have a broad impact on understanding the life cycle of baryons.