Intellectual Merit Criterion

Overall Assessment of Intellectual Merit
Excellent

Explanation to Applicant
Nice description of the overarching goals of the various experiments, and your work in instrumentation, software, and analysis. However, details for challenges for the proposed project would have been helpful.

Broader Impacts Criterion

Overall Assessment of Broader Impacts
Very Good

Explanation to Applicant
Demonstrated committment to outreach via various activities through the observatories, however additional details for future plans would have been helpful.

Summary Comments
Extend his undergraduate work studying (and instrumenting) LLAMAS to understand dust properties in galaxies. Use of DESI, LLAMAS.

Intellectual Merit Criterion

Overall Assessment of Intellectual Merit
Excellent

Explanation to Applicant
The methodology of the proposal is clearly established and if successful, the proposal would greatly improve our understanding of matter evolution in galaxies.The candidate previous experience is right in line with the proposed project. The candidate has very strong reference letter showing hard work and leadership.

Broader Impacts Criterion

Overall Assessment of Broader Impacts
Good

Explanation to Applicant
The candidate would propose tutorial on their machine learning model. However, it is not clear how the propose tool and results would benefit the broader community and would be disseminated to the general public.

Summary Comments
Overall the methodology of the proposal is clearly established and the research goals are compelling. The candidate has an adequate past experience and strong reference letters which give a high confidence that the project would be successful. However the broader impact of the proposed work is not sufficiently developed.

Intellectual Merit Criterion

Overall Assessment of Intellectual Merit
Excellent

Explanation to Applicant
Strengths - The applicant is very motivated to do scientific research, and has demonstrated a lot of initiative to get involved in such. The is perhaps most remarkable given that the applicant is from a college with fewer astronomy research opportunities for students; an unmotivated student may be tempted to just "give up". As a consequence, the applicant has an impressive, broad range of research experiences, ranging from data analysis to instrument development, that should prepare the applicant well for a graduate/research career. These experiences appear to have been very successful too, as confirmed by academic accolades, and very positive statements in the letters or recommendation. The applicant has the potential to be a future leader in observational astronomy. The proposed project appears to be well thought out, including a list of milestones, and a timeline. Some consideration was even given to possible biases (e.g. variations in gas, dust, and star formation evolution). If successful, the project would help advance our understanding of the effects of dark energy on galaxy evolution. Weaknesses - None

Broader Impacts Criterion

Overall Assessment of Broader Impacts
Good

Explanation to Applicant
Strengths - The applicant understands the importance of making science inclusive. The applicant has been involved in outreach activities (observatory tours) and has done some peer tutoring/advising. Weakness - As part of the proposed project, the developed analysis tool will be posted on GitHub for public utilization by other scientists. This has a very limited broad benefit to society.

Summary Comments
The applicant has an incredible potential to do astronomy research and to be a future leader in observational astronomy. The applicant has some involvement outreach activities, but these do not appear to be a priority of the proposed project.