

Oral Qualifier Rubric

The student will perform “astrophysical detective” research. They will trace the development of a topic through history using astrophysical literature. The observational evidence and theoretical explanations of the historical sequence of major developments will be investigated.

The goal of the talk will be to take the audience on their journey, necessarily abbreviated to fit within the 45 minute talk. Specifically, the most important aspects should be identified and outlined, and small details and excursions into the weeds should be avoided.

The talk must be pitched at the level that astronomy faculty and graduate students should understand it, no matter their area of expertise. There should be a balance between breadth and depth, theory and observation, and past developments and present results.

1. **The content.** The talk meets expectations if it appropriately addresses the topic given. The student may focus on aspects that align with their interests rather than trying to cover the entire topic exhaustively.
2. **Identification of the primary reference.** The talk content meets expectations if the historically first important paper (or papers) are clearly identified.
3. **Observationally significant developments.** The talk content meets expectations if the sequence of significant developments is clearly laid out in the talk. The developments should be significant; papers that make incremental advances should be grouped together and little time should be spent on minutiae. The talk content exceeds expectations if technical advances that are responsible for observational advances are identified.
4. **Theoretically significant developments.** The talk content meets expectations if the sequence of observationally significant developments is accompanied by descriptions of the theoretical and modeling explanations that followed (or perhaps in some cases preceded the observations). The most important aspects of the models and theoretical developments should be presented; little effort should be spent on the details of the models and theoretical developments unless important to the subsequent development of the topic.
5. **The present day.** The talk content meets expectations if it concludes with a clear picture of the state of the topic at present. A description of current outstanding questions and controversies should be presented. The talk content exceeds expectations if realistic observational or theoretical experiments that can address the controversies and outstanding questions are identified.
6. **The talk format.** The talk content meets expectations if the slides are carefully prepared and meet professional expectations. The talk content meets expectations if the slides are clear and legible, and plots are clearly labeled and appropriately attributed.
7. **The talk delivery.** The student will present the talk in a professional manner. The talk exceeds expectations if the audience maintains full engagement throughout the span of the talk.

8. **Response to questions.** The talk meets expectations if the student addresses questions in a professional way.
9. **References.** The talks should conclude with a list of references consulted.