

Proposal Evaluation Criteria for McDonald Telescope Time

Each member of the McDonald Telescope Allocation Committee (TAC) evaluates proposals for a given telescope. Individually, the TAC members grade proposals on their own experience and expertise in accordance with the given grading criteria, but collectively, they determine how well a proposal meets the following criteria.

1. What is the scientific context of the proposed observations? How do they fit in with and extend ongoing research? How will the proposed observations impact research in the sub-field, in the field, or even in astronomy as a whole? What is their value as a research project? Have the objectives been declared to be important or endorsed by a national science-oriented body (e.g., Nat. Academy of Science, NSF, and NASA)? Discussion of any one of these items would suffice. Although illuminating something we don't understand is scientifically justifiable, it is not enough to make a proposal competitive. This bullet is often referred to as providing the "Big Picture".
2. What hypothesis will be tested? What competing scenarios will the observations likely distinguish between? Which of several interpretations is being tested which, if rejected, will simplify the picture significantly? If a complex model is being tested, what are the criteria of the test? What are the implications for the uniqueness of the model if the fit to the proposed data is good? The relevant case should be discussed.
3. The observing plan (instrumentation, data products, and methods of reduction and analysis, weather/seeing constraints) and specific scientific goals are clearly and concisely presented to help the TAC understand the expected result of the proposed observations.
4. Are the observations needed to verify a newly announced and unexpected result which could affect the course of research in a field or change the current paradigm?
5. Are the observations time-critical and infrequent? Do they have to be carried out this trimester? Do they represent a target of opportunity (hard to predict but important scientifically)?

6. Are the proposed observations particularly suited to McDonald Observatory skies, telescopes or instrumentation? Uniquely suited? (A strong match to McDonald usually yields a higher score)

7. Is the proposed telescope and instrumentation the best suited at McDonald Observatory for the proposed science? This is most important for 2.7m proposals where the time pressure is greater and some projects on brighter objects could be done on the 2.1m. Is the proposed observing procedure adequate and method/targets for any needed absolute calibration appropriate?

8. Does the proposal provide an estimate of exposure time on primary objects and justification for S/N needed and number of nights requested? A quantitative estimate of these is desirable, but exposure times for a given S/N as determined empirically from actual previous observations using the instrument are acceptable. A realistic estimation of the number of nights is required based on exposure and setup times as well as weather/seeing factors. This item is less important if the telescope time is driven by factors other than exposure, e.g., time-critical events.

9. Is there evidence that observations collected at McDonald Observatory during the past two years are being reduced and analyzed in a timely fashion? If not, why not? If published, or submitted for publication, a simple reference will suffice here. This item is usually graded as either satisfactory or unsatisfactory, keeping in mind that not all observing runs are successful. A good publication record is necessary to demonstrate that the end product of a scientific investigation is being achieved.

10. Are the proposed observations parts of a dissertation? Is progress being demonstrated both on the data reduction front as well as the overall understanding of the science?