Millimeter emission from protoplanetary disks : dust, cold gas, and relativistic electrons

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Propositions

accompanying the thesis

Millimeter Emission from Protoplanetary Disks
Dust, Cold Gas, and Relativistic Electrons

1. Spatially resolved observations of molecular line and thermal dust emission alike are necessary to arrive at a complete picture for protoplanetary disks.

   Chapter 2

2. Interferometric observations of protoplanetary disks in low-J lines of CO reveal less about their total gas content than the complexity of the intervening environment.

   Chapter 3

3. Few things in nature are constant.

   Chapter 4

4. Millimeter observations can constrain stellar magnetospheres in pre-main-sequence binaries.

   Chapter 5

5. The collisional growth theory for planet formation ceases to be effective beyond millimeter-sized aggregate particles.

   Chapter 7

6. Small source samples contain as much information about the larger stellar population as television shows featuring the lives of a few individuals do about an entire generation, culture, or nation.

7. Nightly access to a small research telescope provides unique learning opportunities and observing projects, which are not possible even at the most advanced international observatories.

8. The only difference between science fact and most science fiction is time.

9. Airlines can significantly improve customer service, passenger safety, and transportation security simply by eliminating the à la carte method of fees currently in place.

10. Strict adherence to political correctness and cultural norms threatens open discussion, individuality, and the freedom of expression.

11. There is a difference between having an opinion and having your own opinion.

12. Astronomy should be a required subject in all high schools.

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