**INST 2403**

**The Expanding Ballooniverse**

The expansion of the universe is not an easy concept. After all, we are in it, so how can we “see” the universe expanding? Here is a simple model of an expanding universe: a balloon that is being inflated.

1. With a marker, draw some galaxies on your balloon, then inflate the balloon and watch how it and everything on it gets bigger. Describe what happens.
2. Describe the model and which feature of the model corresponds to what feature of the universe, e.g. the skin of the balloon is ...
3. A model is just a model. No model correctly describes all aspects of “the real thing” – otherwise it would not be the model but the real thing. Describe the shortcomings of your model universe.
4. Is there a center of the expansion? If yes, where is it? If not, why not?
5. If this would be an actual universe, is its mass density above, below or at the critical density? How can you tell?