CONCLUDING REMARKS

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I do not intend to try to summarize the various excellent papers that have been presented in this Joint Discussion on the accuracy of the HR diagram and related parameters. I will content myself with saying that I found them uniformly well-prepared and clear, and all very interesting. I want to thank the various speakers for doing their work so well!

Instead, I propose – since we are in the Netherlands, after all – to assume the role of the good Dutch pastor for a few minutes and draw a few morals from what we have heard and seen. I think the papers presented point to several important recommendations to all of us, and it is these points that I would like to emphasize.

The first moral that I find in this Joint Discussion is a very encouraging one for those of us who are interested in stellar astronomy and astrophysics. It is clear from this JD that our field is alive and well at the 22nd General Assembly of the IAU. This JD drew more poster papers than *any* of the other 19 JD's held during this General Assembly, with 54 papers listed in the programme, compared to a mean of about 19 per JD. In addition, these poster papers come from five of the six inhabited continents, and if we allow a paper from New Zealand to stand in for Australia, then we have papers from all six. Not a bad representation, I think.

The second moral I find is that *fundamental determinations are of fundamental importance to all of us.* We certainly need more of them to serve as tests, standards, and calibrating points. This need seems particularly pressing with respect to fundamental measurements of T_{eff} from integrated flux and angular diameter. Those of us who find ourselves in a position to carry out, or contribute to, such fundamental measurements, should certainly seriously consider performing this service for the broader community, and we should strongly encourage colleagues who are interested in such projects.

I. Appenzeller (ed.), Highlights of Astronomy, Vol. 10, 428–429.

A third point is that it is really important to *repeat* significant calculations and observations, if possible with independent tools. It is very important to have more than one programme capable of calculating LTE model atmospheres, for example, and a second independent determination of a quantity measured only with difficulty can be very nearly as important as the first measurement. Don't be afraid to repeat an important piece of work with different means: whether you confirm the earlier results or not, you will be providing the rest of us with valuable information.

A fourth, and related, point is that when you publish the journal paper on your work, I think that it is really important that you describe what you have done in enough detail that someone else could try to repeat your work with some reasonable hope of arriving at the same end point from the same method or data. This suggestions does not require that you make your papers longer, but simply that you think about this point as you are writing. Try to include what you would have to tell a colleague for him or her to be able to check your results.

A fifth point is that I believe that observers need more commentary from theorists about the adequacy of the commonly adopted procedures for data analysis. Are LTE atmospheres sufficient for this or that kind of star? Are methods of calculating line transfer good enough? What about techniques for analyzing heating and reflection in close binary systems? And it is a big help to many people when a person who develops a new theoretical tool for modeling or analysis takes the trouble to produce a working version for general use. Encourage this kind of public spirit.

Finally, I think that we all need to recall that most analyses of astronomical objects are *underdetermined.* It is essential to explore the parameter space around your favourite model to see how unique that model is, and to estimate uncertainties in derived model parameters. Without this work, no one else knows how seriously to take your results, or what to think when someone else finds different results for the same objects.

That, I think, should be enough to keep us all in food for thought until next Sunday's sermon.

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