Opening address, Chapman Conference "The Great Plume Debate" Ft. William, Scotland, 28th August – 1st September, 2005.

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I would like to reiterate Ian's words and welcome everyone most sincerely to Scotland, Ft. William and The Great Plume Debate Chapman Conference. We have a number of students, post-docs and young scientists here, and I particularly encourage the longer-established scientists amongst us to involve them in all aspects.

The fundamental objective of our meeting is to discuss the origins of hotspots and Large Igneous Provinces. Specifically, is the plume model viable, are alternative models viable, what are their problems, how do they compare with one another and how can they be tested?

I am very pleased that a good range of opinion is represented amongst us. Our viewpoints range from being strongly plume advocate to strongly plume skeptical. However, most of us lie somewhere in between and will be focusing on number and degree rather than whether one extreme view or the other is correct. Most of us are here primarily on fact- and idea-finding missions. This is the best possible basis on which progress may be made as much Natural Science involves weighing up evidence and using it to decide whether one model or another is currently favoured. If it is possible to rule out some models, all well and good, but we are usually in a situation where more than one model is viable and we are striving to shorten the list.

I hope that our agenda will be furthered at this meeting by fearlessly confronting some awkward questions that have perhaps not received enough attention in the past, simply because they are so difficult. These include:

- First, terminology: What exactly do we mean by the word "plume"? Many people would agree that usage of this term has become too loose in recent years. Do we need to lay out guidelines for using precise terminology?
- Second, what do we consider the most likely candidate localities for plumes? Lists vary from fewer than 10, to ~ 20, to ~ 40. If we could agree on a "most likely" list, experiments to test the plume hypothesis could be focused on those rather than on places where plumes are thought to be unlikely.
- Third, can the plume hypothesis be tested, and if so how?
- And fourth, what are the alternatives, are they viable, and how can they be tested? Are their predictions any different from those of the plume model, for example, regarding temperature?

After the end of this meeting, the conveners have to produce a post-meeting report and other written material. I would like these reports and articles to reflect the real opinion of the meeting and I would also hope that they make a real impact on future hotspot research. To this end I have prepared two items to which I would like to bring your attention.

The first is a “Discussion poster” containing maps, information on hotspots, and a big envelope. This will be displayed throughout the meeting. The second is a Strawman/Discussion sheet where I make a proposal for standardising terminology and collating opinion on the strongest candidates for plumes. I would like to invite everyone to give feedback by writing on this form or some other piece of paper and putting their feedback into the envelope on the Discussion poster. The conveners will go through the feedback towards the end of the meeting and present the results to you in the final Discussion/Synthesis session.

If you wish to contribute your own questions and suggestions to the Discussion poster, please feel free to do so. We have available a printer and plenty of paper, so please don’t feel inhibited but go right ahead and contribute.

I’ll finish by saying that I hope everyone enjoys the conference very much, and the fieldtrips that Godfrey Fitton and his heroic band of leaders have organized for us. I hope also that everyone will meet new colleagues and develop fruitful collaborations and new lines of research for the future.