

A chance to do better for astrophysics



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Given that the High Energy Physics community is mainly engaged in relatively few large projects, there may be straightforward arguments for keeping the funding of HEP facilities and exploitation grants within a single research council (the proposed Large Facilities Council). However, the situation is different for astrophysics, with a much wider range of scientific problems being tackled, using a large variety of techniques and facilities. I favour separating the responsive grants

lines for astrophysics and solar-system science from the funding line for large ground-based and space facilities, for the following reasons.

- PPARC has had a static budget in real terms since its creation in 1994. This contrasts with the average 35% increase in budget enjoyed by the other research councils over the same period. The apparently constant PPARC grants-line budget since 1994 masks the fact that a significant slice of that funding has been for instrumentation for space and ground-based facilities – PPARC’s responsive grants line (for postdocs, etc) has come under severe pressure in recent years, seeing a net reduction in posts funded. There would be no reason to expect any improvement if astrophysics

funding was wholly transferred to a Large Facilities Council.

- Astrophysics was a very successful discipline within SERC, winning an expanding share of the funding cake, until PPARC was hived off. There is every reason to expect that astrophysics would be similarly successful within EPSRC. Its high-profile science would certainly be welcomed by EPSRC as a way of raising its own profile. I’m not concerned by the different PPARC and EPSRC funding cultures – when astrophysics was funded through SERC, it had a distinct and separate funding culture from other disciplines there.
- Astroparticle physics has been fostered within PPARC. On the other hand, the links between

astrophysics and other scientific disciplines have been inhibited since the research council separation in 1994. A presence for astrophysics within both an LFC and EPSRC could potentially greatly increase its links with a wide range of other disciplines.

- Two separate funding sources (EPSRC and LFC) are better than just one (PPARC).
- Strategic planning for UK astrophysics should be carried out within EPSRC, dominated by scientific considerations, and minimizing the influence of vested interests that could dominate in an LFC that incorporated the CCLRC and other bodies. The LFC should administer the funds for the construction and running of long-term astrophysical facilities that result from the strategic planning within the EPSRC.

Astronomy is like other physical sciences – if not better



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Since the formation of the Large Facilities Research Council seems to be pretty much a given, and the remaining rump of PPARC seems too small to be viable or economical, the question then arises as to whether this residual part of PPARC – essentially the budget for the exploitation of facilities – should follow the facilities and be administered by the LFRC, or whether it makes more sense to put it under the management of EPSRC. In my view, the first of these solutions would be disastrous, whereas the second could work greatly to the benefit of the astronomical community.

There are two main lines of argument behind this conclusion. First, placing PPARC grants under the LFRC would raise the intractable problem of where one then logically draws the line. Within EPSRC, there are researchers who are strongly dependent on large facilities that would also fall within the LFRC, including internationally run instruments that are directly analogous to facilities such as those provided by ESO. Do their grants also move to the LFRC? What about large-facility users within NERC? And the MRC? What about researchers who are partly dependent on such facilities? Do they have to apply to two different research councils to carry out their

research? What about theorists currently funded by PPARC? What justification can there be for sending them to a facilities research council to bid for funding?

On the other hand, keeping all the grants within a single body such as EPSRC removes such artificial divides, and even does away with some of the anomalies in the current system, such as having to apply to EPSRC for research into relativity but to PPARC for relativistic astrophysics. It would also simplify life for the many PPARC scientists working within EPSRC-dominated physics departments by providing one set of rules for grant applications, a unified fellowships programme, a single doctoral training account for PhD students, etc.

Secondly, including grants in the LFRC would hugely exacerbate the problems within PPARC that arise from the exploitation budget being such a small part of the organization’s total finances. Despite repeated calls for a step change in the level of grant support – from, for example, the Astronomy Advisory Panel – PPARC has made only very modest increases. By contrast, EPSRC’s average level of grant support for physics post-2000 is 25% above that pre-2000 in real terms,

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even though its community, unlike PPARC’s, has not grown over this period. PPARC’s failure to enhance the exploitation budget must arise largely because it is such a small fraction of PPARC’s total finances. Very modest percentage cost over-runs on some of the expensive equipment that PPARC develops will always squeeze out such a change, because these hardware items dominate the budget. Putting PPARC’s grants within a LFRC will simply make this problem an order of magnitude worse: exploitation will be even further from such a council’s core business, and an even smaller fraction of the total budget. By contrast, EPSRC already administers a grant portfolio in excess of two billion pounds, so clearly has scientific exploitation at its heart.

Bear in mind that if we had had our grants administered by EPSRC over the last decade and had simply had our share increased pro rata, we would now be looking at a grant line that is 25% more generous in real terms. And this ignores the fact that astronomers are smarter than physicists, so we would probably have finagled our way to more than our fair share! Indeed, many suspected that the original split of SERC into PPARC and EPSRC back in 1994 was intended to marginalize astronomers and particle physicists to prevent them from doing disproportionately well; I am sure that some of the people who are currently expressing their fears at the integration of PPARC with EPSRC

are the same folk who foresaw the end of the world when the two were divided!

Of course putting grants into EPSRC raises issues, too. Some of these are largely cosmetic or procedural matters such as the absence of a charter requirement for blue-skies research within EPSRC and differences in the way that they currently administer grants, but such issues can surely be dealt with if we engage in the details of the negotiations rather than digging in our heels and refusing to consider the option. However, the fundamental objection most raised by supporters of putting grants with the LFRC (who seem mainly to come from groups that develop instrumentation for large facilities, oddly enough) is that it is unhealthy to separate exploitation from facilities since the two should be developed hand-in-hand to meet scientific objectives. I agree entirely with the sentiment, but not with the proposed solution. It seems completely contrary to the spirit of this argument to have exploitation very much a junior partner that will be overwhelmed by the core business of the LFRC – developing and maintaining facilities. Surely, it would be far healthier and more balanced to have a clean separation between the large facilities within LFRC and grants within EPSRC, but with both bodies being coordinated and directed by science-led policy advice from an objective third party – perhaps this is a role for the RAS?