

Local pride dictates that the most interesting problems require the Hubble Space Telescope for their solution. This little fiction is useful to maintain enthusiasm for our mission, but it is, unfortunately, not an intellectually honest approach to science. The successful launch of the Chandra advanced x-ray observatory at the end of July reminds us of the tremendous potential for breakthrough research with different facilities looking at different wavelengths. We expect Chandra to be an outstanding success and a huge boon to astronomy. Astronomy has been changed profoundly by the pioneers who develop observing techniques and wavelength regions other than those favored by the mainstream. The most interesting problems may be those we have yet to discover for want of looking.

That is why the Space Telescope Science Institute and the Chandra Operations Center are exchanging blocks of observing time to offer their communities the opportunity for multi-wavelength observations. The Hubble program will get 400,000 seconds of observing time on Chandra to award to outstanding proposals that combine Hubble and Chandra observing, with the emphasis on Hubble. Chandra will receive 100 orbits of Hubble time to award for programs with an emphasis on x-rays but a need for Hubble, as well. Starting in Cycle 9 (check), you can propose an Hubble program that requires Chandra observations, as well, and the entire program will be recommended by a single time allocation committee. If you are proposing to Chandra, consider the benefits of using Hubble for your program, too. Rather than trying to beat them, we prefer to join them for our collective success.

The scientific potential is great. Many problems depend on observations of physics at different wavelengths for a complete solution. The study of galactic nuclei comes to mind: the central engines are often powerful sources of x-rays, whereas a lot of the luminosity is absorbed by dust and reradiated at infrared wavelengths. The study of young stellar objects would be incomplete without radio observations of the clouds, submillimeter and infrared observations of the disks, optical and ultraviolet data on the stars and winds, and x-ray studies of the jets and coronae. No doubt most complex astrophysical objects will need a multi-faceted approach for their understanding. We can expect such approaches to become more important as astronomy matures beyond exploration.

The social benefits could be equally great. One cannot help but notice the divisive effects of wavelength chauvinism in the planning exercises for major new facilities. It becomes difficult to prioritize expensive new projects on the basis of "pure" scientific merit, when so many workers in any one subfield (read waveband) feel the need to support that subfield at all costs to preserve their livelihoods. Tenured professors argue with the same passion that linotype operators fought the introduction of computerized typesetting equipment to preserve their skill base – a skill base that was clearly obsolete. Making access to different wavelengths easy by application to a single committee already knowledgeable in the problems traditionally within UV and optical astronomy will allow our users to broaden their skills. They will gain an appreciation for how the other side lives that should be useful to keep their science vital.

We plan to include SIRTf in this exercise, when it is launched. By combining these great observatories, we want to demonstrate that astronomers know how to couple the most expensive facilities for the good of science. In principle, this approach could include ground-based observatories, although only the public facilities will be able to combine resources with the publicly supported spacecraft. If you think this would be a good idea, drop me an e-mail. Each observatory director with whom I have spoken is eager to see if we can make the whole much greater than the sum of the parts.

Steven Beckwith  
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