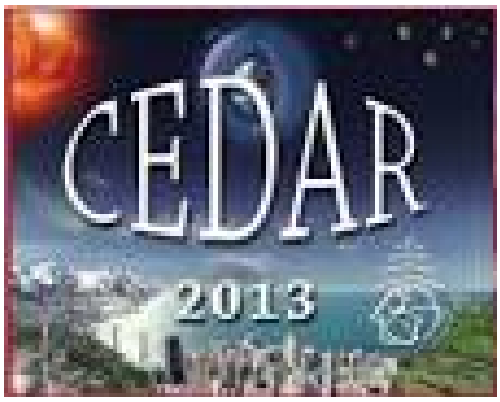
2013 Addendum to CEDAR Strategic Plan



The CEDAR Strategic Plan stresses the potential of a systems science approach for tackling the most important problems in upper atmospheric and space physics. It is not an itemization of those problems, which are already described in other community documents (e.g. the CEDAR Phase III document and the 2013 Decadal Survey in Solar and Space Physics) but is instead a reflection on the scope of the problems and on new ways of addressing them. A system is made of elements in a standing relationship, and systems science, as viewed in the Strategic Plan, emphasizes the relationships over the elements. This new emphasis implies new methodologies which have been left for the CEDAR community to discover.

The CEDAR Steering Committee surmises that the new methodologies may involve the development of new instruments, including networks of instruments, along with ways of supporting them in the field and transporting and ingesting the data they produce. They may also involve the development of new computational algorithms for data processing and of new model and simulation codes able to assimilate data, pursue multiscale problems, and more accurately represent connections and relationships across geospace. The CEDAR Steering Committee moreover recognizes intellectual merit in such "technology development" efforts. While intellectual merit in any CEDAR activity demands that it be rooted in and driven by the most important science questions, it does not demand immediate science closure so long as the pathway is clearly described.

Additionally, the CEDAR Steering Committee recognizes that the problems most conducive to a systems science approach may be beyond the capabilities of individual investigators and their students and may require the attention of small, interdisciplinary teams. CEDAR in fact has a fruitful history of campaign-centric team projects that may be more prescient than ever in view of the themes of the Strategic Plan.