On Optimum Phasing for SIRTF: Letter Report

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On February 2, 1996, the Drs. Marc Davis and Marcia Rieke, co-chairs of the Committee on Astronomy and Astrophysics, Dr. David N. Schramm, chair of the Board on Physics and Astronomy, and Dr. Claude R. Canizares, chair of the Space Studies Board, sent the following letter to NASA Chief Scientist France Cordova.

Thank you for visiting with the Committee on Astronomy and Astrophysics (CAA) at its September 1995 meeting. We appreciated your remarks on educating the public. This letter is in response to your question about optimum phasing for the Space Infrared Telescope Facility (SIRTF) with respect to operation of the other Great Observatories. We are basing our comments on the current NASA plan, according to which operation of the Advanced X-ray Astrophysics Facility (AXAF) will cease in late 2003 and that of the Hubble Space Telescope (HST) in 2005. The CAA considered this question at its meeting and afterward concluded the following points.

As you know, SIRTF will be able to detect sources several orders of magnitude fainter than those detected by any previous infrared mission. We anticipate discoveries that can only be guessed at now. Although a number of important questions remain regarding variable sources that would be addressed most effectively by using all of the Great Observatories simultaneously, the greatest need is to ensure use of AXAF and HST to observe sources revealed by SIRTF's deep surveys.

To the extent possible, the astronomical community will optimize the SIRTF surveys so that areas on the sky previously observed by AXAF and HST are re-observed in the infrared without the need for any special time overlap between the missions. But because SIRTF will observe a larger volume of space than the other two observatories, the greatest scientific payoff will be realized by pursuing a strategy that allows as much time as possible for analyzing SIRTF data before AXAF or HST operation ceases. A year is the minimum amount of time needed to ensure that the sources requiring short-wavelength follow-up are identified and then scheduled for observation with AXAF and HST. A year is needed not only to understand the output of SIRTF but also to ensure that viewing constraints will not preclude pointing of the other observatories at the newly discovered sources. Thus,

a SIRTF launch early in 2002, or preferably earlier, would be optimum. We further note that SIRTF data could be analyzed, at least in a preliminary fashion, on a more accelerated schedule than currently envisioned, but this could drive up the mission cost.

Please call on the CAA for any further advice that you might need on NASA space astronomy and astrophysics missions.

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Last update 2/10/00 at 11:30 am

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