



DEPARTMENT OF THE NAVY

NAVAL RESEARCH LABORATORY

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IN REPLY REFER TO:

10 Jan 2003

Professor Philip Goode
Big Bear Solar Observatory
40386 N. Shore Lane
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Professor Jeffrey Kuhn
Institute of Astronomy
University of Hawaii
2680 Woodlawn Drive
Honolulu, HI 96822

Dear Phil and Jeff,

It is with pleasure that I extend to you my support for your proposed New Solar Telescope (NST), adding, I have no doubt, to extensive support from both the solar and space weather communities.

The currently operating BBSO facility, with its 65 cm telescope has, during its decades of operation, contributed seminal new knowledge of the Sun, in addition to earning the respect (and affection) of the many solar observers who have utilized it. However, as a recent NRC study on Ground-Based Solar Research (by the Space Studies Board in 1998) emphasized, the current infrastructure of ground based solar physics research in the USA is in desperate need of revitalization. That study pointed out that future solar research will require spatial resolutions of fractions of an arc second. This mandates the development of a new generation of telescope that combines larger apertures, clever optical design and adaptive optics.

The NST, with its modern off-axis 1.6 m aperture and high order adaptive optics system, represents an important component of the needed revitalization of ground-based solar physics research in the USA. Since the larger 4 meter Advanced Technology Solar Telescope (ATST) is planning to employ a similar approach, the NST can also function as a low-budget test bed for ATST; the testing, validation and development of crucial components and approaches will undoubtedly aid in a more efficient ATST.

With increasing recognition of the societal impacts that solar activity may perpetrate by altering the Earth's environment – influencing both global change and space weather -- comes the obligation for our community to not only explore the Sun for new discoveries but to monitor its behavior with high fidelity and understand the origins of its variability and terrestrial effects. The NST will contribute significantly in this regard, by continuing

and expanding functional observations of both the Sun and earthshine that BBSO already undertakes for the use and benefit of the broader community.

It is gratifying to see the New Jersey Institute of Technology (NJIT) and the University of Hawaii (UH) collaborating to bring their respective special skills to the proposed BBSO/NST effort. In addition to securing efficient utilization of both personnel and fiscal resources, this collaboration will help to reverse a disturbing trend in solar physics in the USA. The recent NRC study of Ground-Based Solar Research identified the decline in solar physics education in research universities as a major pending crisis that threatens the Nation's supply of future scientists. The collaboration of NJIT and UH brings together two of the nations foremost teaching and research universities in solar physics and provides with the NST a crucial new advanced tool for educating and training future solar physicists of the highest quality.

Congratulations on bringing together a first class team to address well-recognized priorities for future solar physics research and applications.

Very best wishes for a successful proposal.

Judith Lean



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