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Dr. Philip R. Goode
Distinguished Professor of Physics, New Jersey Institute of Technology
Director, Big Bear Solar Observatory
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Dear Colleagues,

I have been asked to provide a letter of endorsement for the "New Solar Telescope" (NST), a 1.6m aperture off-axis telescope that would be built at BBSO by a team of Solar Physicists and Astronomers from the New Jersey Institute of Technology and the University of Hawaii. I think the proposed telescope is an excellent idea for a project that will develop important new technologies and advance the fields of Solar Physics and Solar Astronomy in a time frame (coming online in ~2006) that will greatly aid the future deployment of the planned ATST facility (~2010), and will make significant contributions to solar science in the near future. The BBSO-UH team has just the right expertise to design and build this facility.

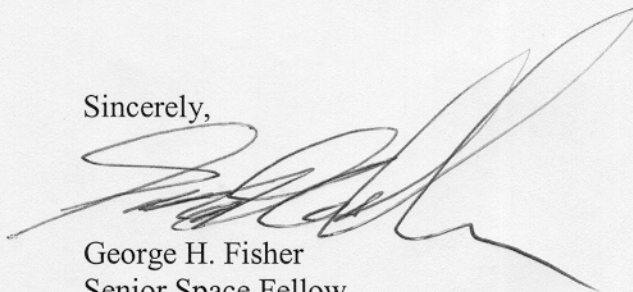
Over the past 5 years or so, I have been a frequent visitor to BBSO, along with my colleague Prof. Chris Johns-Krull, who is now at Rice University. During this time, we've been using BBSO as "guest observers", measuring the linear polarization state of $H\alpha$ in a search for signatures of proton-beams in solar flares. The BBSO staff provided us with excellent technical and logistical support. I was very impressed with the lack of bureaucracy at BBSO, the efficiency of their operation, and the scientific and technical competence of the staff. Such a small, informal operation provides an excellent counterpoint to large national facilities, and provides an essential, hands-on training ground for graduate students interested in solar instrumentation, since BBSO is one of only 2 university-run solar observatories in the US (the other one is at UH).

A testbed for NST concepts is the Solar-C telescope, which is being built by UH on Haleakala, and is now almost complete. Some of the support for the Solar-C effort comes from the Solar MURI grant "Understanding Magnetic Eruptions on the Sun and their Interplanetary Consequences", for which I am the PI. The objective of the Solar MURI project is to develop a quantitative numerical modeling-framework that evolves magnetic eruptions on the Sun, and to test these models with observational data. We recently had a workshop at UH on the use of Solar-C measurements in support of the MURI effort, in particular the use of infra-red polarimetry, which can be used to determine the magnetic field in the solar corona. The ability

to measure magnetic fields in the corona is one of the pillars of the Solar MURI project. These pioneering measurements will be made over the next few years, but will be limited by the modest aperture of Solar-C. The larger aperture of NST would be the logical next step to take what we learn from Solar-C and create a better suite of instruments. In a similar vein, the progress that is made with NST will assist in the instrument design for ATST, in turn increasing the usefulness of that effort for Solar Physics.

In summary, I strongly endorse the NST concept and look forward to seeing many exciting new scientific results that will be taken with the new telescope. NST will advance solar instrumentation, train new graduate students in the critically important instrumentation area, and will be useful to the scientific community at large.

Sincerely,

A handwritten signature in black ink, appearing to read 'G. Fisher', written over a light blue horizontal line.

George H. Fisher
Senior Space Fellow
Space Sciences Laboratory